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ORIGINAL ARTICLES.

THE PROGNOSIS IN SYPHILIS.¹

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WHEN a patient has been informed that he is syphilitic he immediately begins to question the surgeon as to his chances in the future. He will inquire anxiously whether he can be thoroughly cured; how long it will take to cure him; will he suffer very much? Will he be as good as he was before he was infected? Can he ever entertain the thought of marriage, and will his children be healthy?

These momentous questions reveal to us the necessity of a thorough knowledge of the prognosis of syphilis. It is therefore important at first to determine what the nature of syphilis is, and from our studies and observations to acquaint ourselves with the course of the infection in healthy and diseased subjects, and of the influence of therapeutics upon this infection.

Syphilis is a chronic infectious granulation tissue disease caused by a specific poison, the nature of which is doubtful, being considered by some (Max Schuller) a protozoa, and by others (Max Joseph Piorkowski and others) a specific bacillus. The first evidence of syphilitic infection is the chancre, which was derived from a previous syphilitic. This chancre shows that the poison penetrates the epithelium, works its way to the blood vessels, infects the perivascular spaces and involves the inguinal ganglia.

The process of syphilitic infection is one of constant growth and diffusion from the beginning. In the very first days of the existence of the chancre the poison is deeply rooted in the subcutaneous tissue; it is in a most active state and progresses along the course of the vessels until it reaches the body, and then infects the whole economy. Reasoning by analogy, we are warranted in assuming that this new, highly infectious and rapidly growing tissue gives off, probably by means of its microbes, a poison which diffuses itself through the system. We have then in syphilitic infection two orders of morbid changes: (1) The heterologous new cells; (2) the diffusible poison.

In many diseases of microbic origin the severity of the attack depends upon the activity and the quantity of the virus inoculated or received. When the microbes are derived from active and exuberant lesions they usually produce an intense disease in vulnerable subjects, but when the virus is attenuated, or when the microbes are in a weakly state (involution forms), then the resulting in-

vasion is less severe. To these features offered by other infectious processes syphilis does not seem to present points of resemblance. In other words, we know nothing of the mildness or malignancy of the syphilitic virus, and extended clinical observations made by many authorities go to show that a virus which produces severe syphilis in one individual may produce only a mild form of the disease in another. Therefore, in syphilis it may be said, without fear of contradiction, that the potentiality of the poisonous dose is about the same whether it be derived from a severe case of syphilis, or from a mild one. For example: Many years ago I had under my care a very strong young man who had a small and insignificant chancrous erosion on the penis. This man, in whom the secondary stage was very mild, contaminated a rather anemic young woman who developed a well-defined vulvar chancre in which there was a slight tendency to sloughing. This woman was attacked by the malignant form of syphilis which resisted intelligent treatment and careful nursing, and she died six months after infection. While she was in a very debilitated state, just before the onset of the malignancy which terminated her life, she had connection with four young men and infected them all with syphilis. Three of these individuals had mild secondary syphilis, and in only one was the disease somewhat severe. In all four patients the initial lesion was small and not much indurated. My belief on this question is in accord with the opinions of many authorities. Clinical observation has also proved that the potency of the virus is about the same whether it be derived from the initial lesion, a secondary lesion, or the blood.

From the foregoing statement of facts it seems warrantable to conclude that there is a well-marked uniformity in the infectious quality of the virus, no matter from whom it may be derived, and that this poison may produce in some subjects a mild and in others a severe form of syphilis. It, therefore, logically follows from what has been stated that the benignity or severity of syphilis is determined by the condition of the individual.

Clinical observation clearly shows that in some patients, owing to partial immunity, the syphilitic poison meets with such resistance on the part of the tissues that it makes but a slight impression, while in others a marked susceptibility to its action exists, and a more or less severe form of the disease is produced. It has been claimed that from certain features observed in the chancre and during its course we may draw prognostic criteria as to the mildness or severity of the subsequent course of the disease. It has been said

¹ Read before the New York Academy of Medicine at a Symposium on Syphilis, May 4, 1905.

that a small, slightly indurated chancre is usually followed by a mild attack of syphilis. This statement may apply to some cases, but certainly not to the majority. It is not uncommon to see all grades of severe syphilis follow an insignificant initial lesion which might have undergone involution in ten days or two weeks, and have left little if any trace upon the part attacked. How common it is to see severe and extensive syphilitic lesions in persons who never knew that they had a chancre, and in whom it must have been very small. The truth is that both mild and severe grades of syphilis may follow small initial lesions.

It has also been claimed that large and deep primary lesions invariably lead to severe forms of infection, but this statement is only partially true. I have seen many cases of mild syphilis follow a very extensive chancre, and have also seen instances in which two or three parts of the body were the seat of chancres (penis, lip and finger, or penis and lip, or other part), and yet the course of the disease was not at all severe.

Ulceration, phagedena and gangrene, attacking the initial lesion, have been claimed to be ominous signs of a severe attack of syphilis. Extended clinical observation shows that this assumption is not fully warranted. Destructive ulceration of any form or gangrene attacking the initial lesion is always the result of contamination with pyogenic microbes, usually caused by carelessness and uncleanness, and also by intemperate cauterization, and they are to be regarded as disquieting accidents, and not as indices of the malignancy of the initial lesion or as forecasting a severe attack of syphilis. In some cases of phagedena and ulceration of the initial lesion a temporary condition of ill health is produced, but careful treatment will soon remove this accidental complication.

It is also claimed by some authors that extragenital chancres are the forerunners of severe syphilis. This view is certainly based on the observation of a few exceptional cases, and is not borne out by extended investigation. I have reached the conclusion, from the statistics offered in over one hundred cases observed and recorded by me, that the course of syphilis averages about the same in cases beginning in genital or extragenital lesions. It not infrequently happens that the nature of an extragenital chancre is not recognized or that it runs its course unobserved by the patient. In such cases the resulting syphilis may not be treated, or it may be improperly treated, and then a degree of severity may result. This view of the malignancy of extragenital chancres is in some instances due to the hue and cry raised by infected medical men and nurses who, having innocently contracted the disease, take kindly to the mild form of martyrdom with its resulting sympathy from friends and acquaintances. They usually exaggerate their symptoms and give the impression that they are suffering from a severe form of syphilis.

Fortunately for the human race, syphilis in the great majority of cases is contracted by young men between twenty and forty years of age, in whom the vital processes are active and whose health as a rule is good. Such patients are naturally capable of withstanding attacks of various diseases, but some are more resistant than others. According to my observations, it may be said that syphilis is much less severe to-day than it was thirty years ago. This diminution in the severity of the disease is largely due to our improved methods of treatment, to better sanitary and nutritive conditions, and to the greater attention which is paid to cleanliness and antisepsis. But further than this, there undoubtedly exists to-day in the tissues of many individuals a greater resistance to syphilitic infection than was possessed years ago. In other words, in many people a moderate condition of immunity against syphilis exists, which is due to the changes in the tissues and in the blood induced by syphilis in their more or less remote ancestors.

In a general way it may be stated that the large number of persons who contract syphilis are those who are in average good health and have not grown old. In a smaller number the standard of health is less high, and in many patients certain morbid conditions exist which are due either to disease or bad habits, and which lower their power of resistance. Extended clinical observation shows very clearly that syphilis when untreated by mercurials runs a somewhat uniform course. Following the chancre, in due time the secondary cutaneous and mucous membrane manifestations appear, and remain for a short or long period, and then they seemingly undergo resolution. Next a more advanced form of lesions, such as large papules or papulo-tubercles, are observed, and these may in time wither, and later on—in months or years—true tertiary lesions may develop.

Syphilis in healthy persons, male and female, as a rule, runs a mild course, and its poison is eliminated from the system if active treatment is instituted at the proper time. Much depends upon the intelligence and docility of the patient, who, if he enjoys ordinary good health and will follow up energetic, but very carefully directed treatment, may, I am confident, be cured. This comforting assurance may be given to the majority of patients seen in private practice, who, in general, are intelligent, realize the gravity of their condition, and resolve to so conduct themselves and regulate their habits that their vital processes can resist the depressing influences of the syphilitic poison and be able to undergo the strain put upon them by long-continued medication. Many years' study and observation of the nature and treatment of syphilis has convinced me that in most cases a cure is possible, whereas, in years gone by, we groped in ignorance, pursued faulty, and even harmful, therapeutic methods, and never felt ourselves masters of this insidious and far-reaching infection.

This vigorous and intelligent treatment more or less promptly influences and attenuates the virulent infection, which will gradually subside, and in most cases in previously healthy persons a cure will result within two or three years, and in some exceptional cases sooner. The mercury destroys the newly formed and nascent cells, and as they die so does their poisonous power wane. In many cases we see no visible lesions or very simple ones after the first rash. Cases thus treated may be called mild, and in private practice it is the rule, when patients are intelligent and docile, and submit fully to treatment, to see this benign course of syphilis. Such cases may, therefore, be taken as the standard of comparison with other forms of syphilis now to be considered.

There are many persons who, though not absolutely sick, are not really well. In this category are included cases of anemia, flabby and poorly nourished individuals, blonds with light reddish hair, persons suffering with malnutrition, and even those who are mildly neurasthenic. In America syphilis in women runs about the same course that it does in men, but the female sex is much less frequently attacked by cerebral and cerebrospinal affections than are men. Women as a rule are less addicted to alcoholics than males, and they are not called upon to overtax the brain as many men are, consequently they present rather infrequently evidences of specific nervous affections.

Syphilis in the poor and ignorant is mild or severe, and sometimes malignant in its course. Perhaps the greatest of all drawbacks in the treatment of syphilis in the poor is the difficulty of establishing in their minds a realizing sense of the gravity of the affection. Consequently, it is in these individuals that we so often see the disease run a chronic and severe course. They are careless in following treatment, and as a rule cannot be induced to remain under medical care any length of time after the disappearance of their specific lesions or the cessation of the discomforts. This is the keynote to the severity and malignancy of syphilis among the lower orders of our population. Then again, many poor people are addicted to alcoholics, which act harmfully upon them and render the course of syphilis severe and protracted.

Severe forms of syphilis are observed in varying grades of intensity. As a rule, the secondary lesions are numerous and distributed symmetrically over the whole body, and the influence of the specific poison is severe (neuralgias, headaches, joint bone, and muscular pains, etc.). One rash runs an indolent course and is soon followed by one of more severity which becomes complicated with pyogenic infection, and thus we come to see ecthyma, impetigo, and variolaform syphilides and rupia. In these cases there is more or less prostration and little reparative tendency, while in very severe cases fever, sometimes head symptoms, great emaciation, and even marasmus may exist. Then again, in unhealthy

persons, particularly in the lower orders, we may observe what is called precocious malignant syphilis, which is an entirely different condition from true malignant syphilis. Precocious malignant syphilis is noteworthy for the reason, that it usually begins in the severer forms of the disease in which ulceration attacks the various lesions. Then while these degenerating secondary lesions are appearing, ulcerating and cicatrizing, and old are being replaced by new lesions, gummatous infiltration, of the mouth, eye, subcutaneous tissues, bones and joints, and the cerebrospinal system, may develop more or less extensively.

Malignant syphilis is undoubtedly a rare and peculiar form of the infection. Its chief characteristic is that it is essentially a secondary condition and is in no way associated with tertiary syphilis. Patients thus afflicted show evidence of profound systemic poisoning in the high fever, loss of flesh, abject marasmus, insomnia, and pains in various parts of the body. There also may be present such grave symptoms as aphasia, epilepsy, coma, and paralyses. In these cases the nervous affections are not due to gummatous deposit, but rather to the round-cell infiltration around the vessels, chiefly of the membranes of the brain. Malignant syphilis is due to the lack of resistance on the part of the individual to the severity of the infection. It seems that the poison meets in the tissues of the person attacked such a condition of receptivity that it is generated in large quantity and with a peculiar virulence which affects the whole organism.

By far the most potent cause of tertiary syphilis is absence or insufficiency of treatment in the secondary stage. But in addition to this cause there are others which result from lowered nutrition and weak resistance on the part of the tissues. Then, again, certain diseased conditions may act as secondary factors in the development of this late and erratic stage of syphilis.

One of the most formidable complications of syphilis is tuberculosis, and it is only too clearly proven that tissues attacked by syphilis become perfect hotbeds for the fructification of the tubercle bacillus. This destructive and deadly symbiosis is seen in the secondary and in the tertiary periods. In early secondary syphilis, even when well treated and in seemingly healthy subjects, bronchitis or pneumonia may develop and upon them acute miliary tuberculosis may supervene and carry off the patient. Then, again, when syphilis runs a severe course, in some truly malignant cases, tuberculosis supervenes and quickly kills the patient.

Gummatous infiltrations of any or all of the viscera are liable to be attacked by tuberculosis, and syphilitic sarcocele is not infrequently the seat of this second invasion. When considering the factors of gravity in syphilis, we unfortunately must accord to tuberculous infection a prominent place. Chronic alcoholism is a powerful factor in inducing the development of severe

and extensive lesions of the skin and mucous membranes, of cerebral disorders, of a debilitated condition of health, and causes the disease to run into its tertiary stage.

In malarial subjects the course of the disease is frequently severe, the condition of ill-health is well-marked, neuralgias are very frequent and the specific lesions are copious and extensively distributed.

Bright's disease is a factor of much gravity in patients also infected with syphilis, and in many cases its course is very severe. Then again, we sometimes see men and women who have advanced kidney degeneration in whom syphilis runs a surprisingly mild course. Diabetic subjects who contract syphilis are very commonly profoundly influenced by the infective process. Their lesions are extensive and show a tendency to ulceration, and the general depression of health is very marked. The various morbid blood states, such as scurvy, the hemorrhagic diathesis and hemoglobinuria, are serious complications of syphilitic infection, and in patients suffering from them it is common to observe a severe course of the disease. Influenza is frequently seen to be the cause of great systemic depression, and it may become a factor of much gravity in syphilitic patients, in some of whom severe pulmonary affections occur. Rheumatism and gout are not uncommon complications of serious import in syphilitic patients, in some of whom the specific lesions are materially modified by this harmful symbiosis. The debility following various infective processes, such as typhoid fever, diphtheria, erysipelas and the exanthemata, renders the course of syphilis severe for a long or short period.

When it is remembered that syphilis expends its morbid action largely and extensively upon the blood-vessels, the fact strikes one that in old persons the severity of the attack is very much influenced by the condition of the vascular system. Upon the integrity of the patient's blood-vessels, therefore, hinges in a large degree the greater or less severity of syphilis. In old persons arteriosclerosis is common, and may involve more or less of the circulatory apparatus. Besides vessel changes, visceral lesions, general debility, an unstable condition of the tissues, and the systemic morbid effects produced by vicious habits and indulgences, are undoubtedly factors of gravity in syphilis of advanced life. A review of my own experience has convinced me that in many elderly persons of vigorous physique and good habits syphilis runs a comparatively mild course; in less vigorous persons it is more severe; but that in poorly nourished, weakly, and underweight individuals, in the nervous, excitable, neuropathic, and overstudious (brain-workers from all classes) it is often severe and even disastrous in its effects.

Finally it may be said that early, efficient, painstaking and prolonged treatment is most essential in all cases of syphilis, and by it the

course of the disease in the young and the aged may be much modified, may be rendered mild, and in most cases a cure may be produced.

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PROGNOSIS OF SYPHILIS: RELATIONS TO MARRIAGE AND HEREDITY.¹

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SYPHILIS constitutes a social as well as an individual danger. From the standpoint of the individual the prognosis refers only to the risks to his own personal health; from a social point of view the prognosis becomes magnified in importance as the health and life of other individuals may be involved. In determining the prognostic significance of syphilis in relation to marriage and heredity there are two classes of dangers to be considered: first, the personal risks to the prospective husband, which may seriously compromise his health or life and incapacitate him for the responsible position as the head, the material support and breadwinner of the family; second, the contagious risks to the wife and the added increment of danger to the offspring which would come from her infection. Where the question of marriage is concerned, the first order of dangers is apt to be overlooked by the physician who considers only the infective risks to the wife and offspring, but it is to be observed that when syphilis is no longer contagious nor transmissible by heredity, the possible dangers to the health of the husband from his disease are not always extinct.

It is a peculiarity of syphilis that its most dangerous and even deadly consequences are essentially late manifestations. More than 50 per cent. of the most dreaded accidents of syphilis, affecting the brain and end on other organs essential to life occur after the tenth year of the disease. It is further to be observed that these grave lesions of important organs resulting in hemiplegia, paraplegia, tabes, general paralysis, blindness, etc., conditions which are permanent and irremediable, often develop in syphilis characterized by an initial benignity and pursuing a mild course. Their occurrence cannot, of course, be attributed to the mild type of the disease, but to the fact that the patient has been lulled into a false sense of security and has not received a thorough and efficient treatment.

Unfortunately the prognostic indications which point to the development of these late tertiary manifestations of a severe type are often absent. There is nothing more difficult or uncertain than forecasting the future of a given case of syphilis. A favorable prognosis based upon the benignity of secondary manifestations is entirely illusory as a guarantee against the malignancy of tertiary

¹ Read at the Medical Society of the County of New York, March 27, 1905.

lesions, especially when the only solid guarantee—that furnished by sufficient specific treatment—is wanting.

Of all the menaces to the health and life of the individual, lesions of the nerve centers are most to be dreaded. In many cases there are valuable prognostic indications to be drawn from the disease which point to the involvement of the nervous system. The localization of specific lesions in the ocular apparatus, the occurrence of iritis, transient paralysis of the muscles of the eye, the sign of Argyll-Robertson pupillary immobility, etc., are to be regarded as probable though not positive precursory signs of cerebral syphilis.

The second order of dangers refers to contamination of the wife, who may be infected from the contagious accidents which the syphilitic husband bears upon his person or she may receive syphilis by conception.

The prognosis of syphilis from the viewpoint of its infective risks to the wife must be based upon the determination of the duration of its contagious and transmissive periods. Since there is no scientifically accurate test for determining the date of the extinction of the virulent principle in the human body, our knowledge upon this point is based chiefly upon the results of clinical observation. No fact is better established than that when the syphilis is recent and active, conjugal contamination is practically certain; infection may occur even when the husband has no contagious lesion upon his person.

The prognosis is always more unfavorable when there is a tendency to the repeated recurrence of papular lesions localized in the genital and buccal regions, which are the chief centers of contagion.

Clinical observation shows that the contagious activity of syphilis is markedly attenuated, and finally extinguished by time and treatment. Unfortunately the time limit does not admit of exact mathematical expression; it varies in different cases. The elements which constitute a favorable prognosis are the advanced age of the diathesis, a prolonged exemption from specific manifestations, twelve or eighteen months after the completion of the secondary stage and sufficient specific treatment. The arbitrary designation of a period of two and one-half or three years as perfectly safe for a syphilitic man to marry is, medically, an error, and, socially, a danger.

As before intimated, the prognosis of syphilis in relation to heredity is much more unfavorable when the wife becomes infected, as to the relatively restricted influence of paternal heredity there is superadded the much more potent and prolonged influence of maternal heredity, constituting what is known as mixed heredity. The prognosis of syphilis so far as its transmissive power is concerned is based upon the same elements which enter into the determination of the period of its contagious activity. There is a certain concordance but not an absolute identity

between those two periods. In general, it may be said that the corrective influence of time upon syphilitic heredity is less marked, since the hereditary influence may be manifest long after the disease has ceased to be contagious; this is especially true of maternal heredity.

On the other hand, the preventive influence of treatment upon syphilitic heredity is more marked but less permanent. If the syphilitic parent is under the active influence of mercury at the date of impregnation, the pregnancy may result in a healthy child, but if the treatment is suspended, the next child may be syphilitic. Specific treatment seems to hold in abeyance, rather than extinguish the influence of hereditary transmissibility. Experience shows that when the syphilitic diathesis has been subjected to the double depurative action of time and treatment during a period of four years its contagious and transmissive qualities are extinguished. We may therefore conclude that the two most essential elements of a favorable prognosis of syphilis in relation to marriage and heredity are time and treatment.

The consideration of the prognosis of syphilis in relation to marriage would be incomplete without reference to the reciprocal influence of marriage upon syphilis. It is well known that marriage favorably influences certain diseases and aggravates the course of others. In a syphilitic individual in whom the preferential infection is especially directed toward the nervous system the prognosis would be rendered much more unfavorable by marriage. It is well established that the sexual excess not uncommon in early married life aggravates the nervous symptoms and may precipitate serious implication of the brain and cord. In many cases general paralysis and tabes are due to the combined effect of syphilis and sexual excess, just as cancer and leucoplastic affections of the tongue and buccal mucous membranes are due to the combined effect of syphilis and tobacco. Fournier has reported a number of such cases and my own inquiries have elicited the information that in the Manhattan State Hospital for the Insane, on Ward's Island, in a large proportion of cases of general paralysis, there is a history of syphilis and sexual excess in married life. The exhaustion of the nerve centers consequent upon sexual excess may explain the development of the paralyses.

66 West Fortieth Street.

Influence of Electricity on Gastric Secretion.—Many experiments have been published, showing that the influence of electricity upon the gastric secretion in man is slight, yet R. FREUND (*Virchow's Archiv.*, Vol. 180, No. 2) has deemed the subject of sufficient importance to repeat the experiments on animals. One electrode was introduced into the stomach through a gastric fistula, the other electrode was applied to the abdomen, with both galvanic and faradic currents, only a slight amount of alkaline mucus was secreted from the gastric mucous membrane, so that the value of electricity in diminished acidity is absolutely nil.

DERMOID CYSTS OF THE MEDIASTINUM.

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12. *Virchow*. Seltene Beobachtungen: II. Teratoma myomatodes Mediastini. *Virchow's Archiv*, Bd., LIII, p. 444, 1871.

E. K., artilleryman, aged twenty-two years, was admitted to hospital April 6, 1870. Patient was strongly built, well nourished, did not look sick. For several weeks he had complained of frequent chills in the evening, dyspnea, stabbing pains in the right front of thorax and near the right shoulder blade and slight cough with mucous sputum.

Status Præsens.—Expansion somewhat diminished on the right. Thorax symmetrical. Percussion (see Figure 3) gives absolute dullness on the right from the third rib down, passing into the liver dullness and on the left into that of the heart. The upper border of dullness passes obliquely from the third rib downward, outward, and backward to the inferior angle of the scapula. Over the dull area no breath sounds are heard; behind, above the dullness, roughened vesicular breathing. Pectoral fremitus absent on right front and side. Examination of left lung and heart negative. Lower edge of liver is about two finger-breadths below costal margin in nipple line. Temperature normal; pulse slightly accelerated.

Dyspnea, feeling of oppression, and pain increased as the disease progressed. During May a tumor developed at the end of the third rib, which reached the size of a small fist. Dull area on right gradually increased in extent and the right side of the chest became much larger. On May 27 an edematous swelling developed in the right axilla, which soon spread over the entire right side and abdomen; no fluctuation in it. Death occurred on June 14 after an illness of about two months.

Autopsy.—Marked emaciation. On the third left rib an elastic tumor; the mass consisted of a loose tissue and contained blood clot. On opening the thorax a very large tumor was found in the place of the expected exudate; it occupied the larger part of the right half of the thorax, extending to the left of the middle line, and was adherent to the right lower lobe, pericardium, large arteries and veins; it was rather lobulated. In the tumor were found many cysts, the contents of which varied, hair, bits of epidermoid material, cholesterol plates, and fat droplets being seen; the walls were covered with ciliated or pavement epithelium, and in places contained cross-striated muscle and cartilage. Some parts of the wall presented the appearance of sarcoma, others that of carcinoma; similar changes were found in the mass attached to the third rib. Liver presented many hard nodules on its surface and in the substance. Spleen enlarged;

several cysts on the surface, largest the size of a walnut, with bloody fluid contents.

13. *Kückman*. Anlegung einer künstlichen Cystenfelst zur Heilung einer Haarbalggeschwulst im Mediastinum anticum. Inaug.-Dissert., Marburg, 1874. (Cited by Ekehorn and Dangschat.)

Patient was a male, aged thirty-three years, who had been perfectly well till his twenty-ninth year. In March, 1872, he was taken with pains in the left shoulder and in the back of the head. Soon he noticed that a tumor, which grew slowly but steadily, was developing on the left side of his neck anteriorly. On admission to the Marburg clinic the mass was the size of a goose's egg, pushed the sternal end of the clavicle forward and gave fluctuation. The patient had marked dyspnea. Exploratory puncture gave a yellowish-brown fluid with small particles of fat and pavement epithelium. Diagnosis: Dermoid cyst. On incision a purulent fluid with hairs, singly and in tufts, was evacuated. The finger could be inserted through the opening to the second rib under the sternum. Drainage was maintained. Not long after this the patient passed through two attacks of pneumonia; during this time he expectorated a large quantity of foul-smelling sputa in which many strands of hair were found. Drainage being insufficient, an opening was made through the sternum 2 x 3 cm. The condition of the patient was greatly improved, the expectoration diminished, the putrid odor decreased, and he was discharged from the hospital. In February he returned to the clinic and said he had been entirely well for four months; the opening into the bronchus was no longer evident, as he had no cough at all. Examination with a sound showed that the sac was in reality much smaller and was freely movable.

14. *Fodà*. Ciste ateromatosa del mediastino in un'alienata cronica emofiliaca. *Il Morgagni Giornale Indirizzato al Progresso della Medicina*, XVI, p. 498, 1874.

B. B., female, aged sixty-one years, had suffered from no illness excepting intermittent fever for fourteen years, according to the statement of a relative. Occasionally she had had myodynia and pleurisy, and there was marked tendency to hemorrhage after the slightest abrasion of the skin. No palpitation nor dyspnea. For the last few weeks there has been edema of the feet and legs. Death resulted from pneumonia.

Autopsy.—Upper, middle and lower lobes of right lung showed red hepatization. Between the pericardium and the visceral pleura of the lower one-third of the right lung could be seen a glistening, white body, loosely adherent to pleura, pericardium, and posterior mediastinum. The tumor was rather round, of pasty consistency, and on section, a quantity of clotted yellow material escaped. Microscopically the latter consisted of numerous more or less de-

generated epithelial cells, fat droplets, and some pigment crystals. The cyst wall was formed of connective tissue covered by pavement epithelium.

15. *Gläser*. Mentioned by Danzel. Geschwulst mit Haaren im Rectum. *Langenbeck's Archiv*, Bd. XVII, p. 443, 1874.

At autopsy hairs were found in the lung.

16. *Smythe*. Dermoid Cyst of Lung. *The American Practitioner*, Vol. XIX, p. 313, 1879.

January 31, 1879, an unknown woman died at a boarding house where she had been only a few hours. No history was obtainable. From those who had talked with her, it was learned that she appeared greatly exhausted, breathed with much difficulty, and suffered severely from paroxysms of coughing. Her hands and lips were of a livid, almost purple hue. She said she had been suffering from what physicians told her was consumption for about three years.

Autopsy.—Slight emaciation. Hair light, age about thirty or thirty-five. Lower and middle lobes of right lung hepatized. Moderate serous effusion of left pleura. Entire upper portion of left side of chest was filled with a mass extending from above downward to the lower margin of the sixth rib and just beyond the middle line. The tumor was cystic, and from its wall hair, some of which was fifteen inches long, grew and thoroughly mingled with the sebaceous contents, which were about of the consistency of Dutch cheese. Imbedded within the thickened wall of the cyst was a genuine bone; it was very irregular, horseshoe shaped, and weighed 120 grains.

17. *Marchand*. Beiträge zur Kenntniss der Dermoidgeschwülste. Zweiundzwanzigster Bericht der Oberhessischen Gesellschaft für Natur und Heilkunde, p. 235. Giessen, 1883. (Cited by Ekehorn and Dangschat.)

A woman, aged twenty-seven years, married, well advanced in pregnancy, became suddenly ill with pneumonia of the left lower lobe; there developed a gradually increasing pleuritic exudate of the left side. The upper lobe also became infiltrated. In addition there was a small exudate on the right side, and finally peritonitis, which caused death.

Autopsy.—In the upper part of the mediastinum is a tumor the size of a child's head, round, tense, which extends from the second rib to the fifth, and, to the left, beyond the sternal margin and fills the entire upper part of the right pleural space anteriorly. The tumor is cystic and adheres to the upper lobe of the right lung. Heart is forced downward and to the left. In the left lung there are compression and fresh hepatization. The cyst wall is formed of firm fibrous tissue, calcified in several places; the inner surface is in general smooth with several small prominences which are covered with numerous blond hairs. The cyst contained about one-half liter of thick, bright yellow, very turbid fluid with larger fragments and masses in which

hairs are embedded. From the outer surface of the cyst two tongue-shaped prolongations pass upward on the anterior surface of the trachea almost to the lower border of the thyroid gland. They look like fat and on microscopical examination resemble thymus tissue.

18. *Butlin* (Paget). A System of Surgery, by Holmes and Hulke, 1883, Vol. II, p. 259.

"I have lately seen one of these cysts (dermoid), situated deep down behind the first bone of the sternum in a young man who was brought to Sir James Paget, and in whom it had commenced to grow during adult life. It contained masses of connective tissue, covered with skin and fine hairs, and beneath the skin were numerous sebaceous glands. The cyst was freely opened by Mr. Taylor (of Coltishall), the solid growths removed, and the cavity allowed to fill by granulations."

19. *Pinders*. Ueber Dermoidcysten des vorderen Mediastinums. Inaug.-Dissert., Bonn, 1887. Also *Finkler* and *Ribbert*. *Berliner klinische Wochenschrift*, Bd. XXIV, p. 250, 1887.

Autopsy.—In the anterior mediastinum between the first and fifth ribs there is a nodular tumor close against the sternum and adherent to the second and third left costochondral junctions. Lungs are pushed backward by the tumor. In the apex of the left lung there are discrete, grayish white nodules. Anterior part of upper lobe is firmly united to the tumor, which apparently has grown into it, forming a large mass softened in the center. Upper right lobe is adherent to tumor and contains similar but smaller mass, with many small ones. Aorta free; there is a large lymph gland near the esophagus. Heart is pressed downward; fibrinous pericarditis. On section the tumor consists of an upper solid portion with a cyst the size of a goose's egg in the lower right side. The inner surface of the latter is smooth, and large calcified areas are found in the wall. The cyst is filled with a grayish brown, fatty material. Microscopical examination showed that the solid part was lymphosarcoma, which had metastasized and undergone fatty degeneration. The cyst contents were seen to consist of fat and cholesterol crystals, and nuclei resembling those of epithelial cells. The liver was one finger breadth below the costal margin.

20. *Pinders*. *Ibidem*. Male, aged fifty-three years, died of bulbar paralysis.

Autopsy.—Between the pericardium and the left primary bronchus is an encapsulated tumor the size of a goose's egg, whose walls are in part calcified. On its posterior surface a soft tissue is attached; this extends upwards as far as the upper aperture of the thorax, decreasing in thickness as it ascends, and finally becomes inseparable from the adipose tissue. On section the tumor is shown to be a multilocular cyst. The largest space is uneven on the inner surface, and its contents on microscopical examination cor-

¹ Clinical findings by Atranscheld in his inaugural Dissertation. (This I could not obtain.)

respond with those of the previous case (19). Because of defective preservation the histological examination was difficult. In places the wall resembled hyaline cartilage. The smaller cysts contained cells chiefly. The prolongations from the posterior wall of the cyst resembled thymus tissue.

21. *Loewenmeyer*. Demonstration eines Präparats (Dermoidcyste des Mediastinums). *Berliner klinische Wochenschrift*, Bd. XXV, p. 135, 1888.

The patient, a male, entered the hospital in 1884 because of hemoptysis and left sided pleurisy with effusion with moderate exudate. He recovered soon. There was quite marked bulging of the left half of the thorax, with impaired resonance, which extended from the clavicle to about the sixth rib. Apex beat could not be felt in the normal position, but there was a rather diffuse impulse on the right side and pulsation in the epigastrium. In the following years the patient worked quite hard, was in relatively good condition, and had no pressure symptoms. Recently attacks of dyspnea have come on, which have become frequent and severe. After admission suddenly extreme dyspnea and marked cyanosis set in, lasting till death.

Autopsy.—A tumor about the size of a child's head, with smooth, tense walls, occupied the greater part of the left side of the thorax. Its anterior surface was free against the chest wall, otherwise it was adherent to the neighboring parts, especially to the pericardium, which lay in the right half of the thorax, to the diaphragm and the left lung. Adherent pericardium. Apex under sternum. The tumor contained cavities, the inner surface of which was lined by ciliated epithelium. In the cysts were blond hairs in tufts, with epidermis and fat.

22. *Sangalli*. Grossa ciste colloidea composta del polmone destro con peli, glandole sebacee e lamina ossea nelle sue pareti. *Rendiconti del R. Istituto Lombardo*. Serie II. Vol. XXI, p. 662. (Cited by Pfanz and Ekehorn.)

A woman, aged fifty years, died in 1880 after a long illness, during which the attending physician had considered the condition one of chronic pulmonary tuberculosis with large serofibrinous effusion into the right pleura.

Autopsy.—No tuberculosis was found, no pleuritic exudate. The right half of the thorax was occupied by a large tumor which had compressed the right lung markedly. The tumor was adherent to the middle lobe of the right lung and extended downward to the diaphragm. It proved to be a multilocular cyst with bloody, atheromatous contents in which many fine blond hairs were found. In the wall were hairs, hair follicles, sebaceous glands, bone, and cartilage. Pavement epithelium lined the cysts.

23. *Buyvid*. Fibrous Mediastino-pericarditis, Adhesion of Heart to Pericardium, and Dermoid Cyst. *Medizinskoje Obosrenje*, Mosk., XXXII, p. 97, 1889.

E. K., male, aged twenty-three years, a Cosack, entered the hospital December 13, 1888, with the diagnosis of pleurisy. February 23, 1889, the patient was discharged from the army because of anasarca. He re-entered the hospital March 4, 1889. Respiration harsh, on the left, in the axilla, bronchial. March 23 there was noted ascites, considerable dyspnea, and swelling of the feet. Sputum bloody. Pain in the region of the heart and in the chest in front and behind. March 30, considerable fluid in the pericardium and pleura. Apex invisible, not palpable. Dyspnea extreme, face swollen and cyanotic. Orthopnea. Marked ascites. Exitus occurred April 3, 1889, with severe dyspnea.

Autopsy.—April 4. Posterior surface of sternum adherent to underlying tissues. A large amount of fluid in the left pleural cavity. Left pleuropneumonia. Anteriorly the entire space is occupied by a saccular tumor which was accidentally cut into on removal of the sternum, a thick yellowish mass escaping. The tumor is firmly adherent to the left lung and all the mediastinal structures, the heart being in the middle. The right half of the tumor is a dermoid cyst the size of two large fists, which contains two tumblerfuls of thick, granular, yellowish, fatty fluid with many concretions from a pea to a hen's egg in size, also roundish masses containing hair. The microscope reveals pavement epithelium, cholesterol, fat and detritus. Fibrous bands extending from the cyst embrace the great vessels, the bronchi, and the esophagus in part.

24. *Godlee*. Dermoid Cyst of the Right Side of the Chest Communicating with a Bronchus. *Medico-Chirurgical Transactions* (London), LXXII, p. 317, 1889.

Mrs. C., aged twenty-nine years, had not suffered from any symptoms referable to the chest during her childhood. Except that she had been a little short of breath previously, the onset of her illness was sudden, and consisted in an acute pain in the right side of the chest in May, 1886, followed rapidly by the development of acute right pleurisy with effusion. This developed into an empyema. Tapping was postponed, and the diagnosis was confirmed by rupture into bronchus. Cough and expectoration diminished, but never disappeared entirely. Slight clubbing of the fingers. The patient was first seen by the author in June, 1887. At this time there was a slight swelling in the right axilla, the center of which was a little tender. A certain amount of pain was also often felt shooting up to the right infraclavicular region. Percussion gave dullness at the base with peculiar outline (see Figure 4); it was most marked in the axilla, but extended towards the middle line in front, and in this situation reached the level of the third rib, but behind it was abruptly limited by a line passing in a curved direction downwards and upwards, and then vertically downwards below the angle of the scapula. Over the dull

area little or nothing to be heard. The patient was anesthetized, and with an exploring trocar pus was hit at the tender spot, just outside the mamma in the sixth interspace. A portion of the rib and dense pleura were incised and a small cavity was found, from which about one ounce of pus escaped. At the back of the pleura a firm rounded mass was felt, which was thought to be a piece of the lung adherent to the thoracic walls. Expectoration stopped at once; a thick seropurulent discharge remained, and drainage was difficult. The patient had coughed up two hairs since the operation, and one or two had been noticed on the drainage tube. They resembled the axillary hair which had been shaven. The patient now said she had on two occasions coughed up a hair, which she thought at the time she must have inspired. August 9, 1887, the opening was enlarged. At least two handfuls of hair and fatty stuff were removed; then strange, white, finger-like processes were observed, which proved to be thick masses of fibro-cellular tissue covered with skin, from which hairs were growing. A drainage tube was introduced and the discharge became slightly offensive. September 20, 1887, the opening was again enlarged. Three finger-like processes were removed. The cavity was found to extend right up to the apex of the thorax, and the wall of the cyst was most intimately connected with the surfaces of the lung and diaphragm. Removal of the cyst was considered too dangerous. Improvement from the operation was rapid. Discharge still copious and rather sour smelling. The opening, which it was intended to have large, contracted so that only a small drainage tube was admitted. The expectoration showed that the bronchial opening still remained.

A letter from Mr. Godlee, written November 2, 1904, conveys the information that "the patient died October 26, 1891, that is, four years after my first operation, after a week's illness from 'pyemia'."

25. *Koenig*. *Lehrbuch der speciellen Chirurgie*, Bd. II., p. 45, 1889.

Roser incised a dermoid cyst presenting in the suprasternal fossa and later trephined the sternum to secure evacuation of the contents.

26. *White*. Dermoid cyst attached to the front of the pericardium. *Transactions of the Pathological Society of London*, Vol. XLI, p. 283, 1889-90.

The specimen consists of a dermoid cyst about the size of a large Tangerine orange. It was attached to the anterior and right surface of the pericardium and by a few adhesions to the right lung. It was filled with dirty yellowish fluid containing cholesterolin and oil globules. There was also a large quantity of solid sebaceous material, and some hairs which seemed to be loosely attached to the interior of the cyst.

27. *Sormani*. Un Cas de Kyste Dermoïde du Poupon Gauche. *Gazzetta degli Ospedali*, No. 40, p. 314, 1890. (Cited by Foucher.)

A. O., female, aged twenty-four years, entered the hospital at Milan July 17, 1887, complaining of attacks of dyspnea, cough and pain in the left side of the thorax. According to the parents, the patient displayed a great susceptibility to pulmonary trouble from the earliest months of infancy; it was necessary to hold her in the upright position when she was feeding from the breast because of attacks of dyspnea and cough. Her health was fair during childhood except for frequent paroxysms of cough and dyspnea. At the age of sixteen years the patient noticed for the first time brown hairs in her mucous expectoration, to which she paid no particular attention. They continued to be present. During the last two years of her life dyspnea and cough became more severe.

Autopsy.—Patient was cachetic and emaciated. The upper lobe and two-thirds of the lower lobe of the left lung contained a cyst about the size of a child's head. Its lining resembled skin; to it hairs were attached. On the inner surface there were projections. The cyst contained a grayish-yellow, foul-smelling, atheromatous pap in which brown hairs were found. The surrounding lung tissue showed interstitial pneumonia with bronchiectases at the base. In the upper lobe a second, smaller cyst similar to the first was found; this was completely separated from the latter, and in its atheromatous contents were small black hairs. The inner surface was like that of the larger cyst. Microscopical examination of the lining of the cysts revealed all the characteristics of true skin, including hair follicles, sebaceous glands and sweat glands. No cartilage was demonstrable.

28. *Marfan*. Kyste dermoïde du médiastin antérieur. *Gazette Hebdomadaire de Médecine et de Chirurgie*, t. XXVIII, p. 394, 1891.

A coachman, aged thirty years, entered the Hospital Necker July 17, 1891. Examination of lungs showed nothing abnormal. July 23 the patient became comatose and a marked inequality of the pupils appeared; the pulse was infrequent. Exitus took place during the night.

Autopsy.—July 25, 1891. On opening the thorax, there is found behind the upper part of the sternum a large whitish mass the size of two fists in front of the great vessels of the base of the heart. On incision this mass presents numerous white hairs and a very thick sebaceous matter. It forms a cavity having for its lower limit the anterior surface of the pericardium, posteriorly the great vessels, anteriorly the sternum and ribs. Between the anterior edges of the two lungs and the tumor there are loose adhesions; somewhat more firmly adherent to the pericardium. The cyst wall is very thin and its inner surface is uneven. Microscopical examination of the wall shows only connective tissue; no epithelium. Recent tuberculosis of the lungs, tuberculous ulcers in the intestine and tuberculous meningitis are found.

29. Koerte. Berliner medicinische Gesellschaft. Sitzung am 11. November, 1891. *Berliner klinische Wochenschrift*, Bd. XXVIII, p. 1204, 1891.

The patient, a male, entered the hospital with a fistula of the anterior chest wall. He said he had had marked pressure symptoms in the chest a short time before, then the fistula formed; since then there had been improvement. A part of the anterior chest wall, the second rib, and a piece of the sternum were resected and a small sac, the size of a fist, was met with; this was filled with characteristic dermoid contents, including hairs. In time only a small fistula, 4 cm. long and as thin as a lead pencil, remained. The patient, who also had pulmonary tuberculosis, felt so well that he left the hospital. Several weeks later he died of hemoptysis. No autopsy.

30. Harres. Ueber Zähne in Dermoidcysten. Inaug.-Dissert., Zürich, 1892, p. 45.

The specimen showed a dermoid cyst of the anterior mediastinum the size of a fist lying between the heart and the left lung. In the wall, which resembled skin in many places, bits of bone and cartilage, as well as hairs, were found.

31. Bastianelli. *Riforma Medica*, May 20, 1893. (Cited by Pflanz.)

A female, aged twenty years, had had a fistula on the left side of the neck above the sterno-clavicular articulation for four years, resulting from incision of a tumor in this region with the evacuation of fat and hairs. The fistula was opened, its walls excised, and the edges of the wound approximated. Union by first intention; after several weeks rupture with escape of pus. After two similar attempts the manubrium sterni was resected, and behind it a tumor the size of a nut was discovered. This was dissected free from a large vein, the pericardium, and the esophagus; it was less firmly adherent to the aorta. Total extirpation of the tumor was done. Uninterrupted and permanent cure resulted.

32. Kraus. Ein Fall von ausgedehntem linksseitigem Pleuratumor. (Malignes Sarcom und Dermoidcyste.) Inaug.-Dissert., Bonn, 1893. Autopsy findings also reported by Jores. Ueber die Verbindung einer Dermoidcyste mit malignem Cystosarcom der linken Lunge. *Virchow's Archiv*, Bd. CXXXIII, p. 66, 1893.

N. K., male, aged thirty-nine years, entered the medical clinic at Bonn, August 23, 1892. Family history negative. Three years ago the patient was taken with febrile symptoms, acute pain attributed to left-sided pleurisy, and moderately severe catarrh of the smaller and larger bronchi. After two months he returned to work, but occasionally had stabbing pains in the left side, his general condition remaining good. Since May, 1892, he has had continuous pain in the left lower part of the chest. Cough with considerable expectoration, never bloody, has been present since July. During the last three weeks there has been severe dyspnea, which causes him to apply for relief.

Status praesens.—August 23, 1892. Frame is strong; muscles well developed. Expansion of lungs equal. Percussion gives marked dullness (see Figure 5) above and below the left clavicle, the same being continuous with the heart dullness, and extending into the left side as far as the posterior axillary line. Left back and entire right side clear on percussion. On auscultation there is practically no breath sound over the dull area; strong vesicular over the right front. Vocal fremitus is absent in the left front and side. Behind there is relative dullness on the left above, with prolonged expiration; a few râles over lower left with bronchial breathing at the angle of the scapula; over lower right bronchial breathing. Heart dullness extends to right parasternal line. Over the base there is a prolonged systolic murmur. Left jugular fuller than right. There is diffuse systolic heaving on the left side of the chest. August 24, 1892, exploratory puncture yielded a hemorrhagic exudate; the operation was repeated on September 19 with like result, only a small amount being obtained. Soon dullness appeared behind, puncture giving a serous fluid. About the middle of October complete paralysis of the left recurrent laryngeal. Soon the right pupil became wider than the left. In November edema of the left leg came on, less marked on right. The dyspnea became much worse, and on November 11, 1892, exitus occurred.

Autopsy (Jores).—November 12, 1892. Fairly well nourished body, rather marked edema of left arm. Left half of thorax very prominent, especially in the upper four interspaces. In the left half of the thorax there is a large grayish-red tumor. It is firmly adherent to the diaphragm, and the left pleural cavity is filled up by it. The lower part is composed chiefly of a grayish-yellow, pulpy material, in which cheesy particles and numerous blond hairs lie. Removal of this exposes a cyst 19 cm. broad and 6 cm. high. Smaller cysts are also found. Cartilage is found in the wall. Anteriorly, forwards the heart a cyst the size of a fist is found. The wall presents many prominences, on one of which are two small teeth. In the right lung solid tumors are found in all lobes. Microscopical examination showed that the cyst wall in places had the structure of the skin, with sebaceous glands and hair follicles. Cubical and cylindrical epithelium was found in some of the smaller cysts. Unstriated muscles and sweat glands present in the wall. Malignant changes (sarcomatous) were found, the tumors in the right lung being metastases.

33. Kretz. Beitrag zur Casuistik der Dermoidcysten. *Wiener klinische Wochenschrift*, Bd. VI, p. 861, 1893.

The patient was a man, aged thirty years, in whom a diagnosis of pulmonary tuberculosis with bronchiectasis in the left upper lobe was made. He entered the hospital eight days before death, and during this time no hairs were detected in his sputum, nor was there any history of this.

Autopsy.—Body large and thin. Adherent pericardium. Tuberculosis of both upper lobes. In the upper lobe of the left lung a cavity about the size of an apple was found, filled with hair, pus, and fatty material. It lay in front of, and below, the hilum of the lung. The cyst communicated with the bronchi, and the wall resembled epidermis. Near the opening there were light blond hairs. In the wall sweat and sebaceous glands were found, but no adherent hairs were made out. Death was due to tuberculosis.

34. **Dardignac.** Tumeur dermoïde du médiastin antérieur. *Revue de Chirurgie*, t. XIV, p. 776, 1894. First reported for Dardignac by Peyrot. Kyste dermoïde du médiastin. *Bulletins et Mémoires de la Société de Chirurgie de Paris*, t. XX, p. 414, 1894.

N. W., a soldier, aged twenty-two years, entered the military hospital June 18, 1893, because of dyspnea and swelling in the thorax. In May, 1889, the patient, then sixteen years old, had an unaccountable feeling of lassitude, accompanied by persistent pains localized in the right supraspinatus fossa. One and a half months later a prominence was noted in the upper one-third of the right side of the thorax anteriorly. Towards the end of November, 1899, the patient was compelled to stop work on account of dyspnea. Hydatid cyst, probably arising from the liver, was diagnosed. The patient entered St. Antoine Hospital. Dyspnea and retrosternal pain were severe. Exploratory punctures in the hepatic region were negative. Towards the end of February, 1890, the needle was inserted inside of, and at the level of, the right nipple. Eight hundred grams of a cloudy, yellowish liquid came away. Relief was immediate. A few days later five hundred grams were withdrawn. March 5, 1890, the patient left the hospital in good general condition, but weak. In the following autumn he returned to work and was without symptoms during 1891 and 1892. Early in January, 1893, the patient noticed difficulty in performing gymnastic exercises. Each morning there was paroxysmal cough for five or six minutes. June 19, 1893, the following notes were made: Patient is slightly emaciated. There is a bulging of the right front of the chest, most marked about the nipple; it is over the fourth, fifth and sixth ribs, between the parasternal and anterior axillary lines. No pulsation here. Percussion (see Figure 6) gives absolute dullness from the third rib to the base. In the right axilla and back dullness in the lower third, otherwise clear. Over the dull area there is absence of breath sounds. The interscapular space on the right gives weak blowing breathing; no sound over the base. Neither egophony nor pectoriloquy is present. Left lung is negative; heart negative. The liver is two finger-breadths below the margin of the ribs. Exploratory puncture into the most prominent part of the tumor yields a thick, opaque, greenish fluid; microscopically, no blood or pus. Blood examination shows no leucocytosis. August 3, 1893, the patient was

operated upon. Part of the fourth rib was resected, and a whitish tissue, intimately adherent to the periosteum, was exposed; fluctuation was obtained over it and, after inserting a trocar, about 1½ cm., fluid similar to that previously obtained was evacuated. As the cavity was almost emptied, a large tuft of white, curly hairs escaped. The walls of the cyst were rigid. Digital exploration showed that the diaphragm formed the base, the upper part being adjacent to the pleura. On the left the heart was felt. About 1,800 grams of fluid were removed. In it red blood cells, matter analogous to sebum, and hairs were found. The patient made a good recovery; the cyst gradually decreased in size, vesicular breathing returning over the entire right back and in front, except immediately about the fistula. April 6, 1894, the patient had gained considerably in weight and felt perfectly well.

35. **Phans.** Ueber Dermoidcysten des Mediastinum anticum. *Zeitschrift für Heilkunde*, Bd. XVII, p. 473, 1896.

D. A., male, aged twenty-one years, a baker, had always been well up to the onset of the present trouble. For several years he had suffered occasionally from pains in the right ear, and for about one year in the right shoulder. In August, 1894, he noticed difficulty in swallowing, especially solid food. In November pains in the ear and shoulder increased and dyspnea came on with exertion; at the same time the patient noticed a swelling above the right clavicle. In the following weeks this was unchanged. The pains became more severe, especially over the tumor, and radiated through the entire arm. Bulging of the upper part of the chest was also noticed.

Status præsens.—February 23, 1895.—Patient is quite large, well nourished. Neither edema nor distention of the veins is present. There is a considerable bulging in the region of the manubrium sterni, the sternal end of the right clavicle, and the first two ribs on the right side. Skin normal over this. Absolute dullness is obtained in an area sharply circumscribed, extending 4 cm. to the right and 2 cm. beyond the left sternal margin, below in the middle line to the level of the second interspace. Over this region there is no sound of any kind, no pulsation. Above and outside the right sternoclavicular articulation there is found a movable, plainly fluctuating tumor about the size of a nut, and partly covered by the sterno-mastoid. It shows pulsation, which apparently arises from the vessels lying beneath it. Lungs are normal. Heart dullness normal in size and position, separated from the area described above by a clearer note. Radial pulses synchronous and of equal tension. Laryngoscopic examination negative. Temperature normal. Pupils equal. Exploratory puncture of the tumor above the clavicle yielded pus. It was incised and drained. Patient felt better and was discharged March 10. March 13 he returned with a swelling in the same place the size of a hen's egg. Status otherwise as before. April 12

this tumor was opened by Dr. Neugebauer. A cavity the size of a pigeon's egg was opened; it contained pus. Downwards and inwards communication was found into a larger cavity situated in the thorax. On washing this out pus escaped with the fluid, together with many short brown hairs and masses, which, under the microscope, were seen to consist of fat droplets and epithelium. The sinus became too small for efficient drainage and an opening was made in the sternum April 25. By the end of June the secretion was greatly diminished, and the cyst had shrunk. There are no longer any subjective symptoms, such as shortness of breath, cough, or pain in shoulder and arm. Early in October, 1895, the fistula was only 3 cm. deep (in June 10 cm.) and very narrow. Secretion slight, purulent, with no epithelial cells. The patient left the hospital at this time.

36. *Ogle*. Dermoid Growth in the Lung. Transactions of the Pathological Society of London, Vol. XLVIII, p. 37, 1896-97.

The patient was a man, aged twenty-eight years, who died from profuse hemoptysis. He had been ill with cough and occasional hemoptysis for five years intermittently. The physical signs suggested empyema. The temperature was of hectic type and the sputum offensive, so that bronchiectasis was discussed.

Autopsy.—Right lung contains a cavity about four inches in diameter in the lower lobe, separated from the chest wall by a thin layer of fibrous tissue. The cavity communicated freely with the middle division of the left bronchus. Many secondary bronchi open into it, and the contents are offensive, dark red material, looking like pus mixed with blood, and five or six bodies of a cream color, firm but flabby, of a pear shape, with the rough aspect of skin, and with hairs growing from their surface. In addition the contents consist of material like cream cheese and a quantity of hair. Embedded in the core to which the stalks are attached is a large tooth.

37. *Ekehorn*. Die Dermoidcysten des Mediastinum anticum. *Archiv für klinische Chirurgie*, Bd. LVI, p. 107, 1898.

M. H., female, aged twenty-one years, entered the service of Prof. Sahli in the Inselspital, Bern, January 30, 1893, and died September 14. The present trouble began with pleurisy five years ago; since then constant cough with mucopurulent expectoration. Three years ago hemoptysis occurred six times in as many weeks. Each time considerable blood was lost; it was of bright red color, fetid odor, and frothy, and was brought up with severe coughing which always led to copious expectoration, a mouthful being raised at a time. Sputum from entrance has been purulent and since the hemorrhages of a marked fetid odor. Cough is usually paroxysmal, the attacks being ushered in with moderate dyspnea. After raising a large quantity of sputum the patient feels entirely well. Between the paroxysms there is constant cough, and lying on

the right side seems to bring on an attack. There are palpitation and dyspnea on exertion. The patient's father died of phthisis.

Status Præsens.—February 1, 1893. Slender frame of medium size. Muscles and panniculus very small. Marked clubbing of the fingers. Temperature and respirations normal. Left supra and infraclavicular spaces deeper than right; no difference below. Expansion good on both sides. Apex beat in the fifth interspace extending beyond the nipple line. Percussion (see Figure 7) gives a loud, deep note in the right apex and infraclavicular region. From the fourth rib in the nipple line there is absolute dullness. In the axillary line it is on the sixth rib. Over the left lung, the median part, dullness is found. Auscultation over the dull area gives greatly diminished vesicular and diffuse, scanty, fine, moist râles; bronchial breathing in the axilla, elsewhere vesicular. Over the apex of the heart there was a soft systolic murmur, otherwise negative. In the back there is dullness on the right below the seventh rib; above this hyperresonance. On auscultation on the right there is a sound resembling friction with blowing breathing near the median line and sonorous and moist, partly ringing râles. Pectoral fremitus is greatly weakened over the dull area. The upper border of dullness does not change with change in position of the patient. The edge of the liver is three finger breadths below the costal margin. Exploratory puncture in the back and axilla on February 21 negative. The sputum separates into three layers; bacilli and cocci present; no tubercle bacilli, no elastic tissue. After July the patient complained of headache, stabbing pains in the chest, dyspnea, and severe paroxysms of coughing. On September 14, 1893, the patient died suddenly in a fit of dyspnea.

Autopsy.—Bronchiectases in both lungs. Right lung markedly compressed by a tumor adherent to the anterior thoracic wall and to both lungs. In the middle lobe of the right lung there is a cavity from which contents similar to those of the tumor escape. On section of the latter there is seen in the upper part a whitish mass containing pieces of bone. There are several cysts, most of which contain hairs and fatty material; one such opens into a bronchus. The cavities communicate with one another. The cysts are lined with skin, some of the smaller ones with ciliated epithelium. In the solid part of the tumor cartilage and teeth are found in addition to bone.

38. *Ekehorn*. *Ibidem*.

The patient is a male, aged twenty-two years. He had pleurisy with effusion early in 1885. The exudate suddenly disappeared with coughing. In July, 1885, Dr. Fogman exhibited before the Society of Swedish Physicians at Stockholm a few unusual concretions which the patient had coughed up, consisting of fatty clumps of hair, thought to arise from a dermoid cyst. Early in 1886 the patient died with symptoms of severe dyspnea.

Autopsy.—A large dermoid cyst containing bone and teeth was discovered in the anterior mediastinum (Svenska lakaresallskapet's förhandlingar, July 14, 1885, and March 30, 1886). The tumor, somewhat larger than a fist, is above, and somewhat to the left of, the heart. It is firmly adherent to the pericardium. From the inner wall of the cyst polypoid growths extend, as in the previous case. Fatty material, epithelial cells, and hairs form the contents of the cavity, which communicates with the bronchi. In the lower solid portion bone, cartilage and teeth are found. The lining of the cyst resembles skin in all respects. A few smaller cysts are present, lined with cubical and ciliated epithelium.

39. *Bergmann.* Ueber einen Fall von Dermoidcyste des vorderen Mediastinum. *Prager medicinische Wochenschrift*, Bd. XXIII, p. 109, 1898.

V. P., male, aged thirty-eight years, was taken ill in the latter part of December, 1896, with influenza bronchitis, returned to work before recovery, and early in the following month had typhoid lasting three months. On coughing there was pain over the second and third ribs on the right side and the adjacent part of the sternum; a swelling of the periosteum developed here, with subsequent rupture. During convalescence, which was protracted, blood appeared in the sputum after each coughing fit. The patient attributed the swelling to severe pressure on the front of the chest while tightening a screw in October, 1886. The patient is of medium size, moderately strong build. He has frequent cough, with a small amount of frothy sputum. Signs of catarrh over both lungs; no dulness. There is a swelling, as above; skin bluish red over it. In its center there is an opening the size of a pea from which an opaque secretion escapes. The tumor is of doughy, soft consistency and painful.

Caries of the bone was diagnosed and operation was performed July 14, 1897. The skin was turned back and the broken down granulation tissue and softened contents curetted away. The latter had the appearance of atheromatous matter. A movable, smooth tumor about the size of a hazel-nut presented in the midst of the contents. The tumor had a projection into the anterior mediastinum from a smooth, round opening in the sternum the size of a lead pencil. Parts of the sternum and second and third ribs were removed, and a cavity about the size of a goose's egg was exposed, which was filled with a soft, glistening, pultaceous material and a tumor. On removing the contents a well formed tooth was found, and soon a second. The tumor just mentioned consisted of four polyps of varying size. The cyst was drained. For the next few days the patient coughed and raised a bloody sputum mixed with caseous material similar to that found in the cyst. Expectoration decreased and the patient made an uneventful recovery. Examination of the tumor showed that the covering of the polypoid growths had not only the appear-

ance but the structure of skin. Many downy hairs about one cm. long and two more teeth were discovered.

(To be Continued.)

THE SOCIAL STATUS OF TUBERCULOUS PERSONS.¹

BY WILLIAM W. PENNELL, M.D.,
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ASIDE from the dozens of remedies and the numerous sanatoria and other means offered the person with pulmonary tuberculosis for the management of his disease, practically nothing is offered for the management and control of the patient himself—the individual who is the victim of the disease and who goes where he wills and expectorates where he pleases.

This individual generally compels his partner in marriage to sleep by his side, perhaps for the reason that she may follow him to the land of spirits in less than three years. As long as he is able to do so, he visits his relatives and friends because he is unfit for labor, and he is accorded the privilege of his host's house because of invalidism. He sleeps in the guest chamber, lounges in the rocker and on the sofa, depositing his sputum in a vessel provided for his convenience or he ejects it outside the door at one end of the stoop.

At the advice of his physician and desiring to rid himself of his disease, he determines to visit the health resorts; he rides in the railway cars and sleeps in their berths, his offensive breath contaminating the air and his sputtering, recurrent cough atomizing his infecting sputum upon all that it touches, he disdaining the use of a handkerchief to catch the dangerous materials. He sleeps at hotels where you may occupy the same room the succeeding night; dawdles in the office, loiters in the lobby, mingling his spittle in the cuspidors with that of the healthy. He spatters into the telephone transmitter where in the succeeding hour you may inhale the dried, noxious sputum. He drinks from the public watercup while his lips are covered with bacillus-laden saliva, and he drinks from the same glass at breakfast that you may use for dinner. He spits on the sidewalks where the sole of your shoe may be set or where the hem of your lady's garments will sweep and catch a smear of purulent material, and the shoe and garments are put in their keeping place at home to dry. At the church he mingles his outer garments with the others in the vestibule, and takes communion out of the same cup that his elbow neighbor must place to his lips the next moment. His laundry is thrown into the general wash, and his cast-off rags go into the junk dealer's bag along with Mr. Healthyman's.

He courts and becomes engaged to our daughters while he swings around the social circle, a menace to the health of all and, so far as my

¹ Read before the Ohio State Medical Association, Columbus, Ohio, May 11, 1905.

experience goes, a sure death to the victim of his affections if the engagement ends in marriage, because he usually compels his wife to share his bed to the last. In fact, so far as he is able or desires, he enjoys the same privileges, honors and social emoluments as his healthy and uninfected neighbor.

These are some of the things that he does, and yet we wonder where all the cases of tuberculosis come from in persons who are supposed to be stout, and in families where the disease has been unknown.

These matters are not as they should be because, as in the case of smallpox or diphtheria, no mitigating or immunizing agency can be employed to hinder or lessen infection after exposure. This statement may have to be modified later because of the work being done to discover an antituberculous serum. Recently, Latham in the *Lancet* reports cases of this disease that improved under such a serum, as also did Richer in the *Montreal Medical Journal*. But the most interesting and encouraging reports of the work comes from Friedman, in Germany. This scientist isolated a culture of tubercle bacilli from a tuberculous lung in a turtle that produced a fair degree of immunity against human and bovine tuberculosis, and he has hopes of producing an anti-tuberculous serum of great clinical value.

Until these ideals are reached, however, it might be well to have every physician report all his cases of tuberculosis along with those of other infectious diseases, that a practically rigid quarantine or rather segregation as to methods of traveling, visiting, railroad lodging, hotel accommodations, public drinking and expectoration as well as church communion, for each case could be established. The question of marrying an infected person requires no argument. Full publicity in each case of pulmonary tuberculosis should be required and the attitude of the patient toward the public should be such as to insure its safety; besides, it should be a just cause for refusal to keep a marriage engagement should the healthy party so desire it.

The tuberculous person should sleep in a room by himself, his attendants being in the adjacent room. He should be in nowise neglected or forsaken by those who love and honor him but for self-preservation they should refuse to subject themselves to almost certain infection.

There are no grounds why he should be permitted to make social visits to a greater extent than is accorded other persons afflicted with infectious and deadly diseases. When he travels it should be under such restriction as to make him acceptable to others, or his seat in the railway cars should be isolated and prepared for the convenience of the tuberculous, the same being kept clean and properly disinfected. Hotels that shelter him should lodge him in rooms reserved for such invalids, and should be required to disinfect tableware and linen used in such rooms before they are sent to the laundry. Along this

line, it would be well for everybody when traveling to carry his own drinking cup.

A township, city and village ordinance should place a prohibition upon the public expectoration of purulent material, and these ordinances should be enforced so far as possible until the dangerous and disagreeable habit is stopped.

Every church communicant should refuse to drink after the tuberculous person for reasons of health, urging the cleanliness of individual cups for each communicant and insisting that each cup be made aseptic after use.

Where a marriage agreement exists and one of the parties is unequivocally tuberculous, no damage should accrue to the healthy party for refusing to have the marriage solemnized until the tuberculosis is cured; and the mere attainment with the disease should operate as a hindrance to marriage and discharge the healthy party from his obligation if desired.

The tuberculous person should be taught that it is outdoor air and nourishing food and not change of climate that he needs; hence the practice of sending the tuberculous hither and thither in the vain quest for health has no value outside of the outdoor air that comes with the traveling; the same outdoor life at home would produce the same results.

These are my conclusions in this matter: The public should understand that tuberculosis is infectious to susceptible people; that it requires intimate and continued contact for others, but that daily contact with many different tuberculous persons may act as continued contact with one person; that houses in which tuberculous persons have lived or died are infected houses, therefore unfit to live in until thoroughly fumigated and cleansed.

Where persons are suspected of having tuberculosis and refuse to employ a physician, a health board should send a competent medical man to examine such invalids; upon the filing of such examiner's report, if the persons prove to be tuberculous, the movements of the affected individuals should comply with the regulations made for the restriction of those maladies are dangerous to others.

Having been in the practice of medicine long enough to see whole families fall victims to tuberculosis, and numerous families where two or more members were claimed by this destroyer, through infection, I have now put upon paper what is told the friends of the tuberculous. Although these conclusions may seem heartless and needlessly severe, there appears no other alternative for protection against the "great white plague." The sooner the State assumes a defensive attitude against tuberculosis the more rapidly will its encroachments cease. While it is not proposed to place the tuberculous person in the position of the ancient leper who was compelled to cry, "Unclean! unclean!" to the passers-by, yet it is intended that a just, humane and adequate segregation of all cases of (at least) pul-

monary tuberculosis should be instituted for the protection of the uninfected, and the Ohio State Medical Association can confer no greater boon upon the thousands that look to its members for protection and guidance in all matters pertaining to disease and its prevention, than to labor to this end.

MEDICAL TREATMENT OF NEPHRITIS.¹

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MANY excellent recent contributions fully discuss the nutritive problem of Bright's disease and leave little to be said regarding its dietetic treatment. Among notable contributions may be singled out for mention and commendation the work of Von Noorden and his associates. As an outcome of these and other investigations, we find that the dietetics of Bright's disease is to-day on an unquestionably more advanced and rational basis than in former years. If any criticism is to be passed on the correctness of the conclusions of Von Noorden and others who have worked along similar lines, it is that in their investigations attention has been too exclusively focused on the kidneys. Undoubtedly the principle of economy of work to diseased organs is scientifically a sound one, but in the disease under discussion the fact must not be lost sight of that we have to deal with a widespread nutritive perversion of which nephritis is but one manifestation. Although we must admit that in most cases the kidney lesion in the end vindicates the claim to first importance, other organs demand attention during the progress of the disease, and contribute very largely to the symptom group which characterizes this affection. These other considerations, oftentimes of equal importance with renal demands, must be taken into account in the framing of a dietary, and for this investigators have made little allowance. Among important indications which must be taken under consideration are the digestive powers of the patient, the functional capacity of the liver, especially its toxin-destroying power, the presence of anemia or plethora, and, often most essential of all, the cardiac condition and the degree of blood pressure. No routine diet can, therefore, be laid down for the patient with chronic Bright's disease. If he be a confirmed dyspeptic, our measures for diagnosis of the gastric and intestinal states must be as careful and exact as are employed to determine the urinary condition. Such a patient may perhaps be best dieted for his dyspepsia, without regard for the nephritis, the latter being thus most benefited by measures directed to control of the digestive toxemia.

In the presence of marked anemia, a certain disregard of circulatory and renal consequences may be justified in our efforts to improve the

blood state. With low tension a comparatively full diet, rich in proteids, without restriction of fluids; in cases with high tension, a low diet, poor in animal proteids and restriction of ingested fluids is indicated.

In cases marked by cardiac irritability and signs of circulatory failure, the indications for diet must be taken from the heart and circulation more than from the kidneys, such cases becoming in effect cases of heart disease more than renal disease. In short, each patient coming under observation for chronic Bright's disease should become an individual study, and the indications for its management must not be interpreted according to any fixed rules of procedure, but be founded on the results of careful and complete clinical investigation, the lines of treatment being directed in the order of their importance, according to the patient's complete organic needs.

To discuss fully the treatment of chronic nephritis with its wide range of associated defects is a task too great to accomplish in the short space permitted. I have thought best to present the subject in the following simple and practical order: (1) Treatment of chronic nephritis without dropsy; (2) treatment of chronic nephritis with dropsy; (3) treatment of uremia.

The existence of dropsy in chronic nephritis cannot be taken as a basis for classification, and it is even a rather arbitrary procedure to attempt to develop clinical distinctions from this point. As a rule, however, cases coming under observation fall naturally into two groups—those without and those with edema.

Cases of the first class—those without dropsy—are principally examples of the type of chronic interstitial nephritis during the stage of cardiovascular compensation. It is true that chronic diffuse nephritis may occasionally display no dropsy, but, as a rule, more or less edema is manifest. The main indications in the management of this type of chronic nephritis may be summed up in the protection of the kidneys from irritation, especially the strain imposed by intercurrent acute toxemias, and the maintenance of cardiovascular compensation.

The first of these two indications is fulfilled by careful regulation of the patient's diet and personal hygiene. The question of the diet suitable to these cases I will not enter into, owing to the elaborate care which has recently been expended on this subject by eminent authorities. The personal hygiene of the patient is hardly a less important matter. In order to engage the full cooperation of the patient, it will be well to state his case fully to him, emphasizing its necessities and the importance of strict obedience. In submitting our advice as to diet and hygiene, the patient is to be informed that the directions are for his permanent guidance, and to prevent misunderstanding we should furnish him with full written particulars of the course to be pursued. The proper clothing, baths, etc., for these patients will not occupy our attention now, owing to the

¹ Read before the Illinois State Medical Society May 17, 1905.

familiarity of such details. We should urge these patients to such a regulation of their lives as will enable them to spend a large share of their time in the open air—especially in the country, where simple diet, pure air and primitive physical environs simplify the nutritive problem and furnish immunity from accidental infections. The open-air treatment is well-nigh as striking in its beneficial effects in nephritis as in tuberculosis. Exercise is of vital importance to these subjects. A good gauge of the patient's endurance is found to be a feeling of oppression and fullness in the chest, and instruction must be given against walking so far or so fast as to produce this uncomfortable sensation. It is well to advise our patients with this disease to avoid high altitudes, the limit of safety for residence purposes being 3,500 feet above sea level. Oliver's blood pressure observations show that above that point the circulatory pressure rapidly increases. Medium altitudes—about 2,000 to 3,000 feet—will lower mean arterial pressure, and this may be considered in sending patients with plus pressure to the mountains.

In directing our patients regarding the amount of water to drink, our advice must run counter to popular prejudice. The excretion of urinary solids cannot be materially increased by copious water drinking. Moreover, arterial pressure is raised and the mechanical burden of the heart is increased thereby. Our advice must, therefore, be in favor of a strictly moderate indulgence in fluids and against overindulgence, and the patient is to be especially warned against the injurious effects of the immoderate use of mineral waters, of which sanitarium and "spa" treatments so largely consist.

The doctrine of "moderation in all things" is to be preached in season and out of season to these patients, the end in view being to suit the amount of work required to the capacity of the diseased organism for its performance—in short, to avoid hyperfunction.

Two indications of vast importance to the case of chronic nephritis require special mention. They are the care of the bowels and the maintenance of cardiovascular equilibrium.

The nephrolytic action of the toxic products of disturbed digestion is now well recognized. Constipation undoubtedly favors the formation of these bodies. In addition to their renal effects, they increase arterial tension. Our utmost care should consequently be directed toward securing regular evacuation of the bowels. The action of aperient drugs should be supplemented by high rectal enemata, administered in the knee-chest or recumbent position at regular intervals to prevent fecal stasis in the colon.

In chronic nephritis there develop sooner or later during its progress certain well-marked cardiovascular changes, consisting of sclerosis of the arteries and cardiac hypertrophy. The essential feature of the circulatory state is high arterial tension. Not only is this true of so-called

chronic interstitial nephritis, but even when chronic nephritis follows acute infective nephritis, the change is marked by development of increased blood pressure and cardiovascular sclerosis. The majority of cases when they come under observation manifest typical high pressure symptoms, but if no edema is present we may infer that the compensatory cardiac hypertrophy is still secure. The cardiac compensation is, however, one of tense adjustment, becoming constantly more sensitive to disturbing influences. The changes in the arteries are progressive and the increased blood pressure permanent, so that it is only a question of time when increasing peripheral resistance will outstrip the power of the heart to cope with it, and dilatation of the ventricles result. When that time arrives, the diminishing urine, increasing albuminuria, and uremia will leave us in no doubt as to which organ has conserved the life of the patient. Kidneys which can amply maintain their function under increased cardiac force and high blood pressure become miserably inadequate when such support is removed. The clinical history of the large majority of cases at their termination is that the excretion of urine was sufficiently good for the maintenance of life, and that death originated in cardiac failure or resulted from one of the cerebral accidents of excessive arterial tension. This being the case, it is a matter of the first importance to direct our efforts toward the regulation of the circulatory effects of the disease. The *indicatio causalis* for the preservation of an adequate heart is to regulate within safe bounds the arterial blood pressure. We must not, however, lose sight of the fact that a certain degree of increased arterial pressure is necessary for the comfort and safety of the patient. Samuel West has said: "The patient is best without granular kidneys, but if the kidneys be granular it is better that the tension be high than low." The experience of the writer is that no cases are so hopeless and unresponsive to treatment as those marked by low tension. In the treatment of cases of chronic nephritis some instrument for the estimation of the blood pressure is necessary, and the sphygmomanometer should be employed to conduct routine observations from time to time. The physician who depends upon his stethoscope only for information as to the circulatory state of these cases is apt to be more a detriment than a help to his patients.

In the treatment of high pressure cases the basic indication is the removal of the underlying toxemia which causes the widespread vasoconstriction. This is accomplished best by careful dietetic and hygienic regulation, and assisting the kidneys by securing free elimination from the skin and bowels. When these requirements have been fulfilled and the tension remains persistently elevated, we must have recourse to vasodilator medication to mitigate the exhaustive conditions imposed on the heart. We must real-

ize the limitation of such medication, and as it constitutes purely symptomatic treatment, never depend upon it to the neglect of hygienic and dietetic measures. It is a comparatively easy thing to reduce the systolic blood pressure a number of points within a few minutes by means of the administration of an active vasodilator, such as nitroglycerin. The effect of such a dose is unfortunately very transitory, and notwithstanding the striking temporary effect, the fact remains that it is a difficult thing to produce a permanent reduction of blood pressure by means of vascular drugs. Persistent routine medication will alone effect such a result. At what point in chronic nephritis are we warranted in commencing vasodilator medication? Much will depend on the patient's general sense of well-being and absence of symptoms, but it may be stated that when cardiac irritability or evidence of disturbed cerebral circulation (dizziness, tinnitus, etc.) appear, interference is warranted. For the rest, we must depend upon the readings of the sphygmomanometer. As a rule, a systolic blood pressure of over 160 mm. of Hg. is necessary to produce symptoms. At this point hypotensive medication may be instituted. The patient should take a morning saline laxative of magnesium sulphate, Rochelle salts, or one of the aperient mineral waters. A mercurial purge at intervals of a week or ten days is often of the greatest benefit, exercising a double effect both as a peripheral dilator and by increasing the toxin-destroying function of the liver. A vasodilator excellent for its permanent influence is a combination recommended by Brunton (*Deutsche med. Wochenschrift*, Leipzig, Von Leyden number, 1902). This consists of:

Potas. bicarb.....	1.8
Potas. nitrit.....	1.2
Sodii. nitrit.....	.03

The potassium salts are said to have a paralyzing effect on the heart. This effect is desirable in cases requiring less energetic heart action and increased permeability on the part of the arteries, thus lowering pressure at both ends of the circulation. A decided diuretic effect is also secured by the potassium salts. The writer has employed this combination in a number of cases with the greatest benefit, giving it twice daily, well diluted. Another excellent vasodilator for continuous use is erythrol tetranitrate. It may be administered in one-fourth grain doses several times daily, until a mild headache is produced, when the dose is slightly lowered. This drug may be used for weeks and months with good effect, discontinuing it for a week during each month. Another vasodilator of which I hesitate somewhat to speak is aconite. This drug is enthusiastically lauded by W. H. Thomson (*Medical Record*, May 16, 1903) for its effects on excessive arterial tension in Bright's disease, and he reports some striking examples of its efficacy in cases marked by asystole, with high ten-

sion. He orders it in five minum doses every three hours. Although it is difficult to explain the vascular effect of this drug, since it is not a direct vasodilator, but rather a cardiac sedative acting through the vagus mechanism, the empirical fact remains that it will lower blood pressure in an astonishing manner. In a recent case of my own a blood pressure of 247 mm. (Riva-Rocci, 9 cm.) was reduced 50 points in a few days by aconite, with great benefit to the patient's condition, the maximum dose employed being seven minims every three hours. In using the drug, I prefer to begin with small doses in order to guard against idiosyncrasy, and afterward gradually increase to five minum doses, or higher. It is hardly necessary to state that so powerful a depressor drug as aconite should be used with every care, and only in cases marked by excessive tension and threatened heart failure.

Iodide of potassium is another means of lowering tension of which the writer can speak with satisfaction. It is difficult to say in what manner it exerts its effect, as iodide is not a direct vasodilator. Recent observations would indicate that it acts by diminishing the viscosity of the blood, and in this way reduces capillary friction, and so lowers peripheral resistance. I know of few medicinal effects more satisfactory than the manner in which prolonged iodide administration will protect the heart from the ill consequences of high tension. It must, however, be given more or less continuously for long periods, covering in fact months and years. In the presence of high tension some restriction of fluids is indicated, and the patient's habits are to be carefully revised to avoid physical and nervous overstrain.

In the stage of sustained blood pressure and adequate heart without edema, digitalis is to be withheld, as its use is unscientific and harmful. The other cardiac tonics come under the same ban. Diuretics are unnecessary, and do no good. In fact, no medication is indicated other than cardiovascular regulation, and such measures as may become necessary to overcome intercurrent functional troubles. Intercurrent illnesses, however slight, during chronic Bright's disease should be followed by prolonged convalescence, owing to the circulatory strain constituted by effort in a reduced condition.

Whenever the heart, which has hitherto performed its work satisfactorily, suddenly displays vagaries of action, it should not be taken unreservedly as a sign of failing compensation. Some underlying reflex cause will usually be found, the correction of which will avoid serious damage to the heart. Early evidence of genuine cardiac incompensation calls for positive action. This need not necessarily consist of digitalis or other cardiac tonics, for rest in the recumbent position, restriction of fluids and general tonic measures will often restore the working capacity of the heart. Should the derangement of the cardiac action threaten to produce or actually result in dilatation, digitalis is indicated.

When the patient with chronic nephritis has become edematous, one of two things has happened: He has either developed diffuse inflammatory changes in the kidneys, or the heart has dilated. The nephritis may, of course, have been a chronic diffuse process, marked by dropsy from its inception. On the other hand, it is quite as likely to be a case of chronic interstitial nephritis, which has become converted into a diffuse nephritis by means of acute renal irritation from cold, excesses or acute intercurrent infection. It is also a fact that a large number, if not the majority, of cases displaying dropsy are chronic nephritis with failing heart, the dropsy developing as a result of ventricular dilatation. Dropsy in the course of chronic renal disease is not necessarily renal dropsy. It is quite as frequently cardiac dropsy. A better word would probably be cardiorenal dropsy. The distinction is important, especially from the standpoint of treatment. When we can decide that the dropsy, suddenly occurring during the progress of chronic nephritis, is due to an acute exacerbative inflammatory attack, the patient should be put to bed, placed on a light milk-farinaceous diet; sweated and purged until the renal congestion subsides. Baccelli (*Münchener med. Wochenschrift*, L., No. 52) has recently recommended in this form of renal congestion the withdrawal of 300 c.c. of blood from the vena pedidia. He reports great benefit and his results have been verified by others. By this procedure he seeks to lower blood pressure in the ascending vena cava, and so by creating a suction force in the venous channels relieves the congestion in the kidneys. The results are neither so prompt nor so energetic when the blood is withdrawn from the arm. After the renal engorgement has subsided, and the edema disappears, it is important to insist on a long gradual convalescence, to ensure a full return to former conditions.

When the dropsy is extensive and due to established diffuse nephritis, we are forced to rather roundabout means to relieve the renal blockade. Diuretics have next to no influence over purely renal dropsy, and their use will prove disappointing. Prolonged rest in bed is often of the greatest benefit, and should be enforced. These cases should be treated on the "little water and no salt" plan. Fluid intake should be restricted to the lowest possible amount compatible with comfort. The principle of dechloruration is to be enforced. Time will not permit of a discussion of this interesting contribution to our treatment of edemas. Since its introduction two years ago, it has earned for itself an established place in physiologic therapeutics as solving one of the underlying factors of dropsy, both cardiac and renal. In severe cases of anasarca the patient is to be entirely deprived of salt. In moderately severe cases the degree of diuresis may be taken as a criterion of the amount of salt we may permit the patient. As the normal percentage of

chloride of sodium in the urine is about .5 per cent., we can safely permit as many half grams of salt as there are 100 c.c. of urine. For instance, when the daily urine amounts to 1,000 c.c., the patient can ingest 5 grams of salt. As a diuretic in renal dropsy we possess no better measure than colonic irrigation. The effect on the renal gland activity of this measure is often remarkable. Large volumes of solution at a high temperature are to be used. Decinormal salt solution is a violation of the dechloruration principle, consequently bicarbonate of soda solution of the same strength is to be preferred. From two to four gallons of this solution, at a temperature of 110° to 120° F., are allowed to flow into the bowel through a Kemp's rectal irrigator or double-flow rectal tube. The single precaution necessary is to provide against a further increase of tension in high tension cases by simultaneous use of a vasodilator.

When the degree of dropsy is such as to produce severe tension of the skin, the legs and scrotum may be drained by punctures under aseptic precautions. Hydrothorax, if the amount of fluid in the chest is such as to embarrass the heart's action, should be relieved by tapping, and ascites of high degree will require paracentesis. These latter measures may be repeated as often as the indications are renewed. I cannot say that I have seen the anemia increased or the patient's condition prejudiced in any way by repeated paracentesis. On the contrary, by temporarily relieving pressure on the venous trunks, we exert a favorable influence over the renal engorgement. Energetic diaphoresis offers us a valuable means of relieving renal engorgement, and assisting the kidney in its eliminative function. Bendix (*Deutsche medicinische Wochenschrift*, XXX, No. 7) found that when the freezing point of the blood was normal (56° C.), the most energetic sweating process failed to influence it. When, however, it was pathologically low, as in chronic Bright's disease, sweating raised the freezing point almost to normal, showing that more solid substances were eliminated under these circumstances than when the freezing point remains at a constant level. This is particularly noticeable in cases of uremia. These experiences emphasize the value of energetic sweating processes in nephritis. If the blood count shows the patient to be anemic, some form of iron should be administered, although it is well to remember that the anemia, being of a toxic production, is not so readily influenced by hematinics as under other circumstances. Valuable as iron is in the anemia of Bright's disease, its indiscriminate use in the form of Basham's mixture has unquestionably done a good deal of mischief. Basham's mixture is prescribed with a freedom in all forms of Bright's disease, as if it were regarded as a specific for nephritis. It never was suggested that it possesses any curative value, but is rarely a remedy for anemia, as under other circum-

stances. Not every case of Bright's disease is anemic, and it is clearly not indicated in non-anemic cases. In chronic interstitial nephritis it may do positive harm by helping to raise blood pressure. It is most useful in chronic diffuse nephritis, because that form is most frequently associated with anemia.

In cases of dropsy from dilated heart occurring in chronic nephritis, the treatment will differ materially in some essentials. Simple rest in bed will often bring about a restoration of heart function and subsidence of dropsy. Unfortunately many patients with high tension and failing hearts are very uncomfortable in the recumbent position, suffering from asthmatic symptoms and dizziness. These symptoms are the result of elevation of blood pressure in the lying position. Vasodilators may serve to control this, but often one is compelled to compromise on the sitting position, even allowing the patient to spend the nights in a chair. These are cases which display the inverse pulse, and paradoxical rise of blood pressure on lying down. Prolonged rest in bed, even for patients who can do so without discomfort, is hardly desirable in cardiac hypertrophy of Bright's disease. The dynamic forces of the circulation being lowered by bodily inactivity, a rise of blood pressure in the vena cava throws still more upon the already weakened heart—the work of maintaining the failing circulation.

The drug *par excellence* in cardiorenal dropsy is digitalis. Any reliable preparation of the drug may be employed. I have never been able to satisfy myself of the superiority of the infusion in these cases. In giving digitalis in Bright's disease it is necessary to guard the patient against the vasoconstrictor influence of the drug by means of the simultaneous use of a vasodilator. The only exceptions to this rule are constituted by those rare cases in which the blood pressure is low throughout the disease, and in cases where the cardiac weakness has caused secondary low blood pressure. A drug of great value in cases of cardiorenal dropsy is theobromine and its salts, the salicylate and sodiosalicylate (diuretin). Very remarkable results are sometimes secured by the administration of these preparations in dropsy, with underlying cardiac causes. There is evidence accumulating which tends to show that theobromine acts upon the heart by stimulating the elimination of retained chlorides, and so secondarily improves the heart's action by lessening the circulatory load. When the heart is weak, the patient must be well nourished, and receive a fair proportion of proteid food. Severe and restricted diets are to be avoided in nephritis with bad hearts.

The patient with chronic nephritis is never entirely free from the danger of uremia. Although its development is usually a progressive and gradual affair, it not infrequently falls suddenly upon the patient without warning. We sometimes see a case in which uremic coma or

convulsions are the first symptoms to betray the presence of chronic Bright's disease. Any acute intercurrent disturbance, such as a simple cold or diarrhea, may serve to precipitate a violent uremia. Gastro-intestinal disturbance especially favors the development of the uremic toxemia, often, no doubt, by inducing *Bacillus coli communis* invasion of the kidneys. This fact emphasizes the importance already referred to of keeping a clean bowel.

In the presence of uremic manifestations, however slight, purgatives are to be employed without hesitation. It should be one of the rules of treatment in nephritis to give a purgative each time the patient complains of headache, dizziness, mental hebetude, dyspnea, etc., all of which may prove to be precursors of uremia. At the first appearance of uremic symptoms all proteid food should be withdrawn. Strubell (*Wiener klin. Wochenschrift*, July 8, 1901) found that dogs with experimentally induced uremia lived twice as long when fed with carbohydrates as when fed on proteids and fats.

Our blood pressure observations will enable us to gauge in some measure the imminence of uremia, the intensity of the uremic toxemia being accurately expressed by the arterial pressure, which rises steadily as the toxins accumulate. An increasing blood pressure should, therefore, put us on our guard. In acute uremia an important point is gained by lowering blood pressure. Our best and speediest vasodilator to relieve the high tension of uremia is venesection. This measure exerts its best effects in uremia complicating acute nephritis. It is of less dependence in chronic nephritis, and is only to be used in sthenic cases with high tension. It is to be avoided in asthenic and far-advanced cases. The relief following venesection is transient, but may serve a good purpose when supplemented by other active measures, such as sweating, enteroclysis, catharsis. Sweating should be carried out vigorously and as soon after onset of the uremia as possible. As soon as free diaphoresis has been induced, the sweat may be temporarily interrupted, as its persistence for too long a time may become a harmful influence. Enteroclysis by continuous irrigation of the colon with large volumes of hot bicarbonate of soda solution constitutes one of our most active measures for inducing diuresis and diaphoresis. Subcutaneous saline infusions, although beneficial in the uremia of acute nephritis, are much less effective in uremia of the chronic disease.

Time will not permit of further discussion of measures employed to combat uremia. Reference may, however, be made in conclusion to lumbar puncture. Seiffert (*Münch. med. Wochenschrift*, LI, No. 10) has employed this measure extensively in acute uremia, with great benefit. It may be employed in uremic coma and convulsions of chronic nephritis, although probably with less likelihood of success. Le Grain and Marie speak highly of the effects of this procedure in uremic headaches.

There are many important points which are not touched upon in the foregoing brief consideration of the treatment of chronic nephritis, and the writer is compelled to forego from lack of time any reference to the treatment of complications, and special phases of the disease.

The ability of the organism to adjust itself to the disturbed equilibrium of impaired organic health is marvelously displayed in many incurable diseases of important organs, and we often stand amazed at the length to which the thread of life is spun, notwithstanding the gravest organic lesions. Under no circumstance is this faculty for adjustment so wonderfully illustrated as in chronic kidney disease. Despite the most serious defects, nature's compromise not only preserves a balance of fair health, but does so for astonishing periods. A realization of this fact should be a warning to us that nature needs our assistance only, seldom our interference.

There is no room for pessimism in our attitude toward this disease, and although obviously there is no remarkable cure to be performed by any mode of treatment, careful regulation of the life, and attention to little details, judging nothing unimportant, will secure results which are unsurpassed in any of the chronic dystrophies. The two most important indications, in the estimation of the writer, are to protect the patient from intercurrent acute disturbance, and to maintain the compensatory adjustment in the circulation.

105 State Street.

THE CARE OF THE PERINEUM, WITH A DESCRIPTION OF A NEW METHOD OF DELIVERY OF THE SHOULDER.¹

BY H. KAY KERR, M.D.,
OF HAMMOND, N. Y.

MOST of what has been written about the care of the perineum refers to the delivery of the head. With regard to the delivery of the head, I will mention only two points. Both of them are old, and are mentioned not because they are old—although perhaps nothing the worse for that—but because in my experience at least they have been found good.

The first is hot fomentations; cloths wrung dry out of hot water, just as hot as the hands can stand, and held in contact with the perineum during the acute pain. These do good in two ways. They relieve pain, or at least render pain more easily endured, and if we doubt it all we have to do after using them a few times is to withhold them, and see if the patient does not call for them again. They also render the perineum more elastic, so that it will stretch easier and farther without tearing, and in this way make laceration less likely.

There is a time coming, however, in the progress of the labor, when hot fomentations have to be dispensed with, when the perineum needs supporting. This brings us to the *second point*

concerning the delivery of the head, the choice of a method. The particular method employed is doubtless of less consequence than the actual support given the perineum, no matter by what method. My own plan is: With the thumb on one side and the fingers on the other, reaching well out over the perineum, laterally, to make pressure from without inward toward the center, and with the ball of the palm resting well back on the posterior part of the perineum—the center of the palm not touching the anterior part—also to press forward toward the fourchette. In precipitate labor, where more resistance is needed, the fingers of the other hand may be substituted for the thumb; but for the purposes of description and in most cases it is better to place the thumb on one side and the fingers on the other, reaching out far over the deep lateral structures of the perineum, where the perineum is thick and strong and cannot tear, and with each palm press toward the central, weaker part of the perineum, the part where the great strain comes and the part that will tear, and with the ball of the palm resting well back on the perineum, posteriorly, to press also downward and forward in the direction of the outlet of the pelvis. In this way the perineum is stretched *from its circumference*, laterally and posteriorly, where the muscular development is strong and will stand stretching, while the weaker center and anterior are protected. And I keep this up just as long as I can, until the occiput has engaged, passed under and has emerged outside the pubic arch. Even then I press toward the center and forward in the direction of the outlet of the pelvis because the longer we keep the perineum from slipping over the chin the more, of course, the perineum is stretched and the roomier it becomes, and, as we all know, the more the head elongates and the less becomes the anteroposterior diameter that does the mischief. In other words, by delaying within reasonable limits the birth of the chin there is a more thorough conversion of the long occipito-bregmatic-frontal-mental diameters into the shorter suboccipito-bregmatic-frontal-mental diameters, successively, as presenting parts—the difference between danger of laceration and very little danger of laceration.

Most of us who have had some experience can, I think, take fairly good care of the perineum during the delivery of the head, the text-books to the contrary notwithstanding. It occasionally happens—has happened to me and probably to some of you, and may happen to any of us again—that after we have delivered the head without injury to the perineum, and have congratulated ourselves on that fact as we have a perfect right to do, we make an examination before leaving and are surprised by the discovery that there is a very considerable laceration. Or, if we fail to make the discovery ourselves, perhaps the nurse makes it for us, and that does not improve matters. Now, this proves, if it

¹ Delivered before the St. Lawrence County Medical Society, Potsdam, N. Y., April 18, 1905.

proves anything, that the head is not the only factor in laceration of the perineum. I think we can take a step farther and take the position that the head is not even the major factor in serious laceration; but that in many cases, after the head has been delivered with the perineum still intact or practically so, the damage is done by the ploughing through of the shoulder afterward.

In order to obviate this difficulty, or, as some put it, "to minimize the tear," I will try to describe a method of delivery that I have been using for the past nine years, and which I think well of. Ordinarily, during a considerable part of the progress of labor, my patient may assume any position that she pleases, and I often encourage the squatting position which at certain times makes for progress; but when it comes to the point of delivery I want her on her left side with back to edge of bed. After the birth of the head there is usually a short pause, during which time, or at the beginning of the pains which follow, rotation usually occurs. In this case we do not wait for rotation, but regarding it as a first presentation—the face looking backward—by placing a hand on each side of the head and making gentle pressure in the direction of rotation, rotation is easily effected. Now that rotation has occurred, what is the situation? The face looks upward toward the mother's right thigh; the occiput is directed downward toward the mother's left thigh; the right shoulder presents against the pubic arch in front; the left shoulder presents against the soft structures of the perineum, behind, but, at least, one and one-half inches from the outlet.

As soon as rotation is effected, and all this is but a momentary affair, I place my left hand on the right side of the child's head and press back firmly. There is no danger of doing harm here as the point where the left shoulder presents against the perineum is too high up to lacerate, so I press back as far as it will go. What does this do? First, it stretches the perineum once more from its circumference, laterally and posteriorly, toward the center and anterior. Muscular contraction is thereby almost entirely overcome. The perineum is now temporarily paralyzed and is elastic like rubber and can hardly be made to tear. Second, every inch or fraction of an inch that the left shoulder can be carried back into the perineum, we gain that much in lowering the right shoulder into the pubic arch. Now, when a pain occurs, what takes place? The left shoulder cannot descend because it is held well back and high up in the perineum. Not so with the right shoulder, which does descend. As it does so, it describes part of a circle around the left shoulder, held as a fixed point high up in the perineum, so that the course of the right shoulder is downward and slightly backward, bringing the prominence of the shoulder well back into the vulvo-vaginal outlet and the right arm, below the

shoulder, into the pubic arch. One pain is usually enough to bring down the right shoulder and cause it to bulge well out of the vulva. This accomplished, I close the fingers of the left hand, with which backward pressure is being made, low down on the back of the neck or upper end of the spine and raise up. This increases the space between the back of the child and the maternal soft parts on the left side below and also opens the right axilla. Through this opening in the axilla, I pass the forefinger of my right hand and hook it around the arm, close to the shoulder, bring it down behind the child's back out of the vulva and sweep it over the pubic arch. Then, before relaxing my grip with the left hand, I place my right hand on the left side of the child's head and, with my left supporting the perineum, by a downward, forward and slightly upward movement, effect delivery. Thus, before there is the slightest strain on the anterior part of the perineum, we have exchanged the long diameter—from the tip of one shoulder to the tip of the other (bisacromial)—for the shorter diameter—from the axilla to the tip of the opposite shoulder (axilla-acromial) as a presenting part, the difference again between laceration and practically no danger of laceration.

This procedure is mainly applicable to uncomplicated cases, which are in the great majority. It can be employed in most forceps cases by removing the instruments in accordance with modern practice before complete delivery. A previously repaired perineum is no hindrance. The chief difficulty is in precipitate labors, and these are rare in primiparae in which the preservation of the perineum is of such vital importance. With a thorough familiarity with the technic, the cases are few in which it cannot be successfully employed.

MEDICAL PROGRESS.

PHYSIOLOGY.

The Oxidative Processes of the Tissues.—Marked differences in the oxidative capacities of the various tissues have been observed by W. ZANICHELLI (*Arch. Ital. de Biol.*, March 21, 1905). Thus, in the dog the spleen has an oxidative power which is at least ten times as great as that of the other tissues with the blood. The second place belongs to the pancreas, and next come the kidneys and the lungs, then the liver, and lastly the blood, whose power is quite limited. The high degree of oxidative power possessed by the lungs corresponds to its marked degree of autolysis observed by Jacoby, and indicates that the pulmonary parenchyma is not only the seat of passive gaseous exchanges, but is also the seat of metabolic processes not less active than those of other parenchymatous organs. The high degree of oxidative power of the spleen is probably associated with its hematologic function. The author finds that the age of the animal has no effect in its oxidative powers.

Researches in Heat Regulation.—It has been found that special substances are formed in the blood of animals subjected to abnormal temperatures, and that

it is also markedly toxic if injected into other animals. A. MONTUORI (*Arch. Ital. de Biologie*, March 21, 1905) made a special investigation along this line, with the object of isolating these toxic substances, and of determining whether they produce the same effects in the animal in which they are generated. He transfused certain dogs with the blood of other dogs kept in baths of hot water (40° to 48° C.) or of cold water (0° to 6° C.). The results were as follows: The transfusion of the ordinary or of the defibrinated blood from the heated or refrigerated dog causes in the transfused animal a diminution or an augmentation of the quantity of heat produced. These thermic effects are proportional to the amount of blood transfused, and also to the degree of heating or refrigeration of the animal from which the blood is removed. The effects are always transitory and cease at the end of not more than twenty-four hours. The transfusion of large quantities of blood from heated dogs is fatal, which is not the case with blood from refrigerated animals. The administration of the blood by way of the stomach or intestine has no thermic effect, while the transfusion of blood from an animal kept at the ordinary temperature has also no thermic influence. These results reveal a form of heat regulation that has been hitherto unknown, indicating the production of thermo-inhibitory substances in heated animals, and of thermo-excitatory substances in refrigerated animals. This mechanism applies only in the case of the heating or cooling of the cutaneous surface of the body, and does not apply to the same condition in the lining of the alimentary canal. It is interesting to note that animals heated by general faradization furnish a blood that causes hyperthermogenesis and elevation of temperature in other animals. If an animal be injected with antipyretics (quinine, antipyrine), its blood will not cause any thermic changes in another animal, which proves that the antipyretics do not act by the production of thermo-inhibitory substances. The author next sought to discover the effects of these transfusions in the other bodily functions. They do not cause any change in the respiratory and cardiac rhythm, and produces no vasomotor effects. This shows that the thermic polypnea and tachycardia, and the vaso-constriction produced by cold are not the result of the elaboration of specific substances in the blood. Transfusions from a refrigerated animal cause, besides an increase of heat production, also an exaggeration of the respiratory exchanges. On the contrary, the transfusions from the heated animals had no effect on the gaseous exchanges. The transfusions from a heated animal cause an increased production of sweat in the animal transfused. This action is evidently a central one. Likewise, there is also an increased secretion of saliva, which is similarly a central effect, since section of the chorda tympani annuls it. There is also increased secretion of pancreatic juice. Hence, the elevation of an animal's temperature causes the production of a substance or of substances which may be compared to pilocarpine. The transfusion of blood from a heated animal or even heating an animal directly causes an increase in the muscle-glycogen. The hepatic glycogen does not suffer any marked variations. One naturally concludes that there is a transformation of the glucose of the blood into the glycogen of the muscle. The results of an investigation into the nature of the thermo-active substances were very incomplete. They are not volatile, for blood subjected to the mercury-pump preserves its thermo-activity. This evidently resides in the morphologic elements, for the serum is

inactive, while defibrinated blood is active. The thermo-active substances are destroyed by a temperature of 55° C., but they are apparently not of the nature of enzymes, for the thermic effects are quite proportional to the amount of blood transfused. These substances can not be extracted with glycerin or ether. The author next studied the site of formation of the thermo-active substances and the mechanism of their activity. Heating or cooling normal blood outside of the organism does not conflict with thermo-activity. These substances are formed neither in the spleen, pancreas, nor liver, for removal of the two former or ligature of the blood vessels of the latter does not interfere with the formation of the thermo-active substances. Curarization also does not inhibit their formation. If the spinal cord of an animal be destroyed, the heating or cooling of the animal always gives rise to a thermo-inhibitory substance. The conclusion is readily drawn, that for the production of hyperthermo-active substances the integrity of the nervous system is necessary. The facts discovered by the author have a great deal of importance and permit the following conclusions to be drawn: In the struggle against high temperatures, the thermo-active substances play a predominating rôle. The method by which the thermo-inhibitory substances operate is explained as follows: Accompanying the lowering of the bodily temperature, it has been seen that there is an increase in the synthetic processes of the organism, such as the increased formation of glycogen. The freezing-point of the blood also rises, indicating a greater molecular concentration; that is, a diminution in the number of ions in the blood. These synthetic processes, which are necessarily accompanied by a diminution in the number of molecules of the blood, since the simple ones are built up into more complex ones, are therefore also accompanied by a transformation of some of the heat of the body into latent potential energy. This change of the manifest heat into potential energy is called the "endothermic reaction." This represents an admirable economic disposition in the organism. At the same time that the bodily temperature is lowered, there is a rebuilding of the tissue whose oxidation was the cause of the excessive heat. The choice of people in torrid climes of a diet of carbohydrates instead of one of fats supports this hypothesis, since the carbohydrates, by the simplicity of their constitution and the mobility of their molecules, furnish a more ready material for the synthetic processes of the organism, and therefore furnish a ready means for the cooling off of the body by the endothermic reaction. The thermo-inhibitory substances, by stimulating the production of sweat, furnish another means of lowering the bodily temperature by the evaporation. It has been found that muscles which have been made to contract vigorously furnish substances which, if injected into other animals, increase the production of heat, and that the genesis of these substances is dependent upon the integrity of the central nervous system. Now, it is known that the application of cold to the exterior of the body causes an increase of muscular tone. The conclusion is drawn that the effect of external cold causes reflexly a contraction of the muscles, and it is by means of these contractions that substances are formed which have the power of accelerating the oxidative processes with a resulting thermo-genesis. The muscular origin of the thermo-active substances indicates that the muscular apparatus represents the heat-regulating mechanism of the animal economy *par excellence*.

OBSTETRICS AND GYNECOLOGY.

Vaginal Hysterectomy for Cancer of the Cervix in the Gravid Uterus.—In cancer of the cervix in pregnancy the interest of the fetus, as well as that of the mother, is to be considered. The fetus is constantly threatened by abortion, which may be due to hemorrhage, or by the progress of the rapidly developing neoplasm involving the body of the uterus. The development of cancer is more rapid in the soft and vascular tissues of the genitals during pregnancy, therefore if the pregnancy goes to full term the consequent dystocia endangers the fetus. A. COUDAMIN (*Annales de Gynecol. et d'Obstet.*, March, 1905) reports 30 cases which show that we may expect good results if the patient is operated on sufficiently early, and quotes statistics to show that the fetal mortality is 25 per cent. to 30 per cent. in cases allowed to go to term. In 71 cases already reported 11 had had no recurrence after four years, and were thus considered cured. Although the results are less satisfactory than where the disease is not complicated by pregnancy, they are not sufficiently bad to warrant the sacrifice of the mother for a fetus whose viability is uncertain. During the first six months of pregnancy, with an operable cancer of the cervix, radical operation should be performed at once. After the sixth month the problem is more complex because the fetus is approaching the age of viability and its interests must likewise be considered. If the cancer is seen early the surgeon may wait a month or six weeks for a viable child, but if the neoplasm has already advanced it should be operated on at once, sacrificing the interests of the child to those of the mother. An anesthetic may be of great use in determining the extent of the neoplasm. At the eighth month the child is viable, and an abdominal Cesarean section should be performed, followed at once by a hysterectomy. After the eighth month vaginal Cesarean section should be the exception and reserved for those cases where the fetus is very small. The contra-indications for operation are the same as those for a non-pregnant uterus. Any invasion of the parametrium would not justify a vaginal hysterectomy, as interference in these cases is likely to be followed by a recurrence. In such cases palliative treatment should be employed. In cervical cancer coincident with pregnancy the vaginal hysterectomy is no more difficult up to the sixth month than when uncomplicated by this state, there being compensation for the increase in size of the uterus in a more easily dilatable way of access, more elongated uterine ligaments, which permit more easily the descent of that organ. The uterus may be emptied first by making an incision in the median line, rupturing of the membranes and delivering the fetus. Another advantage of the route is that the limits of the neoplasm may be better appreciated and the incision made well outside of the cancer zone. The lessened risk of infecting the peritoneum from the cancerous stump speaks also in favor of the vaginal route. The vaginal hysterectomy, without preliminary incision of the posterior and lateral culs-de-sac, may be performed as follows: (1) Excision of the salient parts of the cancerous growth, followed by use of Paquelin cautery or a strong caustic to the cut edges. The anterior lip of the cervix is then seized and drawn well downward and forward. (2) The anterior vaginal cul-de-sac is incised on the anterior lip of the cervix and the tissues separating the vagina from the bladder liberated. (3) An incision following the median line of the anterior lip of the cervix is continued along the anterior wall of the uterus, the edges of this cut are held open by

forceps which are advanced as the incision is carried higher up. The membranes are ruptured as soon as reached, the child is extracted, usually by version. The median incision is continued upward till the fundus uteri can be delivered into the vagina. Bleeding is easily controlled in this procedure. (4) Large curved clamps are placed upon the broad ligaments from above downward which meet at the level of the posterior cul-de-sac. (5) The broad ligaments and the posterior vaginal wall are cut within the clamps. These clamps may be left in place forty-eight hours or replaced by ligatures. An advantage of the procedure is the ease of hemostasis and small loss of blood during the operation. It avoids the incision of two vascular parts, the lateral cul-de-sac and the point of union of the lateral with the anterior cul-de-sac. When the seat of the cancer is on the posterior lip it frequently extends to the posterior or lateroposterior vaginal walls. In such a case the wall should be separated from above downward and the entire cancerous mass removed *in toto*. The objection to this operation is that when the neoplasm is on the anterior lip of the cervix and extends to the vaginal mucous membrane it is inapplicable. But when the mucous membrane is invaded to a slight degree it will be possible to incise in front of the tumor and reach the anterior peritoneal cul-de-sac. More advanced lesions involving the cellular tissue separating the bladder and cervix contraindicate any attempt at vaginal hysterectomy, since a portion of the bladder must be resected near the ureters, which would be particularly hazardous. In such a case death would follow more rapidly than if the growth were not interfered with.

Paravaginal or Abdominal Operation in Carcinoma of the Uterus.—In a discussion on the relative merits of the two operative routes, G. GELLHORN (*St. Louis Med. Rev.*, June 3, 1905) comes to the following conclusions: (1) The radical abdominal operation, as far as the routine ablation of the lymphatic organs of the pelvis is concerned, has thus far failed to yield the desired results. (2) On the other hand, the eradication of the parametria has been found to reduce greatly the percentage of cures. (3) Consequently, the simple abdominal and vaginal operations which do not include this procedure must be discarded. (4) For the extirpation of the parametria, Wertheim's method is the best of the abdominal operations. (5) It has, however, certain advantages compared with the paravaginal method of Schuchardt. (6) Considering the encouraging results of igniextirpation, a combination of thermocautery with paravaginal extirpation gives promise of further improvement in operative results.

Sudden Death During or Immediately After the Termination of Pregnancy or Operation on the Pelvic Organs in Women.—E. P. DAVIS (*St. Louis Med. Rev.*, June 17, 1905), from a study of twenty-five cases, arrives at the following conclusions: (1) That sudden death may occur after abortion, labor or operation from undemonstrable causes. (2) Death may follow abortion, labor or operation, from the rapid formation of a pulmonary embolus. Pulmonary embolism may develop before the placenta has been delivered, or when delivered by Credé's method. It is not frequent after Cesarean operation or after the more complicated obstetrical operations. Predisposing and probably exciting causes are bronchial infection and abnormal conditions of the blood. (3) Primary thrombosis and secondary embolism may cause death after the termination of pregnancy or operation. Causes: pre-existing infection, mechanical violence, altered con-

ditions of blood serum, and lesions in the walls of the valves. (4) Sudden death occurs in parturient women and after operation from reflex nervous shock without assignable cause; also from disease of the thoracic viscera, from infection of the placental site and other obscure conditions.

PATHOLOGY AND BACTERIOLOGY.

Agglutination of Typhoid and Paratyphoid Sera.—The observation has frequently been made that the serum of patients suffering from typhoid will also agglutinate the paratyphoid germs, and it may be difficult to say whether the patient suffers from typhoid or paratyphoid. D. KORTZ and B. STEINBERG (*Munch. med. Woch.*, May 23, 1905) point out the necessity of always determining the highest dilution in which agglutination will still take place. It may also happen that the typhoid bacillus will not be agglutinated by typhoid serum in low dilution, while with high dilution clumping will be perfect. In a case mentioned a dilution of 1 to 80 was tested against both typhoid and paratyphoid. The latter was clumped actively, the former not at all. A diagnosis of paratyphoid therefore seemed probable, yet on further testing the serum, active agglutination was obtained with typhoid at 1 to 640, while the paratyphoid was not at all agglutinated in this dilution. The microscopic test is always more delicate than the macroscopic.

The Bacillus Coli Communis as a Cause of Septicemia.—The rôle played by the *Bacillus coli communis* leads T. G. MOOREHEAD (*Practitioner*, June, 1905) to consider whether or not it is ever the cause of septicemia. It has been long known that the bacillus has pyogenic properties, and while its presence is always suspected in abscesses near the alimentary canal, the author considers that there are cases in which the symptoms point to a sapremia being present, due to the absorption of the colon bacillus toxins, and that also there are cases in which the organism assumes a septic or septicemic rôle, as distinct from a pyogenic one, and produces an actual septicemia. He bases this statement upon the following facts: (1) Its known power of producing a septicemia in animals, and in connection with this fact it may be stated that Lésage and Macaigne have shown that the organism, isolated from the intestines in cases of diarrhea, is much more toxic than that obtained from the healthy alimentary canal. They, in fact, believe that the bacillus of the normal intestines can only exert a local pyogenic toxicity, while that from diseased intestines has septicemic powers. It may also be stated that Ferranini has shown that the *Bacillus coli communis* exerts a much more powerful effect on ill-fed animals than on well-nourished ones; that, in fact, its toxicity increases with the diminution in resisting power of its host. (2) Cases in which the *Bacillus coli* was found in the blood during life. (3) Cases of general sepsis reported by Schenck, Gebhard, Kerr, Eisenhardt and others, in which the *Bacillus coli* was found universally throughout the body in pure culture after death, and along with these may be mentioned Kamur's work on Winckel's disease. (4) The occurrence under natural conditions of infectious diseases in the lower animals apparently caused by the colon bacillus. The power of the *Bacillus coli*, in modifying the course of, or preparing the way for, other forms of septicemia, is indicated by the following facts: (1) Motta Coco, experimenting on animals, found that the *Bacillus coli* assumed very virulent properties in company with streptococci;

(2) Widal and Besançon, working with the streptococci of the mouth, ascertained that many which were harmless when injected alone into animals became virulent when mixed with the colon bacillus; (3) Blasi and Russo-Travali reported, in 1896, a case of mixed infection with the *Bacillus coli* and diphtheria bacillus, and found experimentally that a mixture of the two bacilli was much more poisonous than either organism singly. Schenck also reported, in 1898, a case of combined coli and streptococcal infection, and makes the statement that the *Bacillus coli* is always very virulent when combined with streptococci, while, as showing that the opinion that the *Bacillus coli* might combine with other organisms to produce a septicemia has been long held, it may be added that in 1896 Sims Woodhead said that he believed many so-called streptococcal infections to be really secondary to colon infections. From the above reasoning the author concludes that the existence of a *Bacillus coli* septicemia is probable.

Vaginal Cysts.—From an examination of 53 specimens of vaginal cysts, T. S. CULLEN (*Bull. Johns Hopk. Hosp.*, June, 1905) classifies them into the following varieties from an etiological standpoint: (1) In 26 the origin was clearly the result of a perineal tear or a perineal operation. (2) Four seemed to originate from vaginal glands. (3) Eleven were apparently derivatives of Gartner's duct. (4) Three were situated near the external orifice of the urethra. (5) In eight it was impossible to determine the mode of origin. The inclusion cysts are due to small portions of the vaginal mucosa being included in the stroma. Such cysts are small, and are naturally found in the posterior or in the lower lateral wall of the vagina. In three of the cases of this series the cysts probably originated from the vaginal glands. In 11 of the cases a dilatation of a portion of Gartner's duct appears to have been responsible for the cyst. The most common situation was in the anterior vaginal wall just behind the urethral orifice. In two cases it was probable that the cysts owed their origin to urethral glands. Several of the unclassified cysts probably had their origin from Gartner's duct. The author considers that various gas cysts which are at times found in the vagina of pregnant women are analogous to those found in the liver and other organs, due to gas-producing micro-organism, and suggests as a causative factor the *Bacillus aerogenes capsulatus*. In countries where the echinococcus is prevalent, some vaginal cysts may be due to them.

Pathology of Gastric Ganglia.—If dogs are treated with a dilute mixture of ethylic and amylic alcohol, gastritis of varying severity may be induced. In the most acute type, L. AMATO and P. MACRI (*Virchow's Archiv*, Vol. 180, No. 2), found marked hyperemia, involving all the layers of the stomach and extensive changes in the nerve-ganglia (chromatolysis, vacuolization, karyolysis, atrophy). In the less acute types, the hyperemia was less advanced, particularly in the muscular layers, but both here and in the subacute cases the nerve-cells were seriously altered. In man the following changes could be detected: in pyloric cancer, the ganglia were either destroyed directly, or else the seat of interstitial changes of advanced degree. Chronic interstitial and parenchymatous inflammation was also found in the various types of chronic gastritis. The poisons which set up the gastritis probably have a particularly strong affinity toward the nerve-cells, and there can be no doubt that the changes in the latter are responsible for many of the symptoms.

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SATURDAY, SEPTEMBER 2, 1905.

A NEW HOPE IN THE BATTLE WITH QUACKERY.

FROM its earliest inception the medical idea has been a reaching for truth and a denial of falsehood in the sphere of physiological functioning. Since the days of Hippocrates the medical profession has been fighting superstition, within its ranks as well as without. Now that a wider education is in a small measure enabling the masses to reason instead of following blindly, it would appear that there is less hope than ever of dealing the death blow to quackery; for this very reasoning power, this newly awakened belief in one's ability to choose and discriminate has been seized upon by the modern descendant of the ancient quack, and the specious appeals to the patient's intelligence which appear in the advertisements of the daily papers are far more seductive than the cruder forms of quackery that advertised universal panaceas. The survival of the unfit goes hand in hand with the survival of the fit.

The blatant contempt which the quack expresses for what he calls the physician's obstinacy and indifference to all but his own views prevents the ethically-minded among us from replying in kind. We cannot place ourselves in the quack's shoes and denounce others while insisting on the superiority of our own treatment,

and they know it, such knowledge having ever constituted stock in trade. Hence the quacks, and by these we mean the propagators of every form of cure that has the credulity or ignorance of patients for its basis, the quacks skilfully put forth practically all the medical literature that meets the eye of the average layman.

It is therefore with a feeling of positive pleasure that we find published in the *Popular Science Monthly* for September a paper on quackery, read before the Yale Biological Club. It is a layman's study of a layman's grievance. It is a comprehensive but brief protestation that such a state of things should exist, that there should be twenty thousand quacks in New York City to six thousand physicians, that quackery in such a city as Berlin should have increased 1,600 per cent. in thirty years, and that the vendors of quack medicine should be among the largest customers of wineries and distilleries.

"Given," says the author, "on the one hand, the limitations of scientific medicine, the pain and dread of disease and the power of auto-suggestion, and on the other hand, depraved humanity, hard-driven in its struggle for existence, but cunning in the knowledge of men, and you have the essential parts which, with a few minor pieces, make up the smooth engine of quackery. Psycho-therapeutics and knowledge of human nature constitute the quack's entire outfit; all he really needs is moral atrophy and the instincts of a cheap drummer."

Clearly and logically the fraud perpetrated upon the people through the medium of the daily papers is exposed. "With a few notable exceptions, such as *The Outlook*, *Life*, *Ladies' Home Journal*, *The Evening Post* and a few others, the whole secular press unblushingly sprinkles its columns with the charlatan's cards."

Very cleverly is it hinted that "it is not bare accident that America is at once the home of quackery and the home of the free," for the passion for personal freedom is, as one writer has savagely described it, the attitude of "jealously safeguarding to every citizen the sacred right of going to the devil in his own way."

We as physicians have for the most part resigned ourselves to helpless silence, for whenever we attempt to raise our voices, even the disinterested have seen an attempt at extending the "Medical Trust." But now that the public has been given rope enough there is a possibility that they may suddenly realize that there is sufficient with which to hand itself.

It is perfectly true that "quackery is a seated evil which the community in self-defence ought to weed out." Such papers as have not prostituted themselves should agitate the matter. Mr. Bok has made a strong stand, and in the last issue of the *Ladies' Home Journal* has contributed a forceful page, silent yet emphatic, as to the frightful extent of the evils in question. Other editors, it is suggested, would secure more of the necessary sensational effect by the free exploitation of the ills resulting from the use of patent nostrums than they could from exposing a gas or a beef trust; and once the public realized that they were being duped, and could only be kept in that state of mind, they would have at least a different point of view of the men who advertise their prowess in the healing art.

In Germany the public-spirited men of all professions have organized a systematic campaign against quackery. Is it possible for us to do the same? Cannot we at least endeavor to bring the matter before the public school authorities as a subject for some of the free lectures, and one deserving a small place in the curriculum along with the matter devoted to the dangers of alcohol and tobacco?

The hope lies in the layman who is the sufferer. We have known for centuries that he has been duped and defrauded, but he has thought our warnings were made purely in self-interest. From the tenor of the address referred to and other signs of the times, we hope that the worm is nearly ready to turn.

THE AMBULANCE SERVICE OF THE AMERICAN METROPOLIS.

In the evolution of the modern municipality the inauguration of a highly efficient organization for the safeguarding of life and health is, strangely enough, a very late development.

The government first concerns itself with the protection of private property, and to this end a powerful police force, at least potentially, and a magnificent fire department are evolved. In the meantime the increase and congestion of the population necessitate a closer regard for the health and comfort of the masses. Hence, in due time, are established large public hospitals, alert Boards of Health, sanitary water-supplies, small parks, scientific methods of street-cleaning, etc. Far-seeing publicists are beginning to realize the economic gain resulting from governmental expenditures that tend to diminish disease and save life.

In every community there is a body of citizens who are better adapted even than medical men to point out the deficiencies in public systems of relief. These are the practical sociologists. The physician is too deeply engrossed in concrete instances of disease and suffering to note the general aspect of sanitary problems as well as the busy charity-worker or the interested citizen. It is quite natural then that a timely suggestion for remodeling and improving the ambulance service of New York should come from a layman. At the recent Portland Conference of Charities and Correction Mr. Nathan Bijur referred to the poor ambulance service of the metropolis, and advocated the appointment of a commission to investigate the subject. He suggests that temporarily a central ambulance bureau might be looked after by the Police Department, which, working in connection with the various hospitals, would be able to render speedy relief. A system of instant response to calls for aid, such as the splendid Fire Department of New York affords, is imperative. The solution of this problem is rendered difficult by the irregular distribution of hospitals over the city.

It does not require a long residence in the heart of the metropolis to become familiar with the inadequate facilities for rendering first aid to the injured. An enumeration of a few concrete instances will serve to emphasize the truth of this statement.

A child is run down by a trolley-car. Grabbed up by some spectator, and followed by a sympathetic crowd, it is carried to the corner drug-store. A police officer has probably arrived on the scene by this time and, calling up Police Headquarters, asks that an ambulance be summoned. Accordingly one is dispatched from the nearest hospital that maintains an ambulance service. In some parts of the city the nearest hospital may be located a distance of several miles. In the meantime the victim either receives no care or else must submit to the crude ministrations of the amateur surgeon. Rarely is any effort made to summon a nearby physician, for no one cares to assume the responsibility of paying the fee.

Not long ago a lady fell while alighting from a Broadway car. She was carried to the sidewalk, where she lay unconscious, surrounded by the usual crowd, in the center of which stood the stalwart policeman who had already telephoned for an ambulance. A physician who at that moment was passing by edged his way through the

crowd. His proffer of aid was insolently refused by the officious guardian of the peace, and as a reward for his pains he was actually told to mind his own business.

In the eyes of the public the ambulance surgeon is a sort of hero. The prestige conferred by the hospital uniform and the settled air of nonchalance with which the young tyro in surgery usually lies outstretched on the rear seat of the ambulance have a tendency to create an exaggerated opinion in the popular mind of his attainments and skill. In many instances the junior interne who responds to the call is fully deserving of this good opinion. It is needless to refer to the numerous examples recently recorded in the press of personal daring and self-sacrifice displayed under the most trying circumstances by the young surgeon. Yet hardly a week passes but some instance of poor judgment or reckless self-confidence on the part of the embryo surgeon is brought to one's attention. Many a time in cases in which the physician of mature mind and experience would hesitate to make a diagnosis, the ambulance surgeon is quick to decide that the case is one of alcoholism, shamming, hysteria, etc. The unnecessary frequency of these mistakes has naturally called forth the indignant criticism of the public.

There is a class of cases which, while not particularly urgent, nevertheless require prompt removal to a hospital. It is frequently difficult to locate a hospital that is willing to admit the patient, and under these circumstances days may elapse before the patient is removed. An instance of this is afforded by the following experience in the Borough of Brooklyn during the recent epidemic of meningitis. A physician desired to have a child under his care, suffering from a severe form of this disease and unable to receive the proper care amid its poor surroundings at home, removed to a hospital. After communicating in vain with over half a dozen hospitals, which would not admit a case of meningitis, he finally telephoned to the King's County Hospital, corresponding to Bellevue in Manhattan; he was told that the case would be admitted, but that an ambulance could not be sent that day, as it was Sunday. In fact, a period of forty-eight hours elapsed before the ambulance arrived.

The needless delays, the unnecessary mistakes, the fear displayed by the ambulance surgeon of being harshly criticized by his superiors for bringing an unsuitable case to the hospital, the

summoning of an ambulance from a distant hospital when one from a nearer hospital might be obtained, and the lack of sufficient ambulances to supply the large territory of New York—all these are elements which require attention in reforming and perfecting our ambulance service. A few of the broad features of such an improved system might here be considered.

First, there should be a central bureau, as suggested by Mr. Bijur, which would receive all calls and would cooperate with the various hospitals. It is questionable whether anything would be gained by maintaining this bureau in connection with the Police Department. The high degree of supervising efficiency demanded, the utmost familiarity with the conditions in the various hospitals, the preservation of records, the investigation of complaints, and the preparation of periodical reports showing the work accomplished and the various needs of the system all require the maintenance of an independent branch of the public service, which would be as reliable and as ready to meet every demand for instant aid as the Fire Department.

Second, the number of ambulances should be increased, and in sections of the city that are remote from a public hospital and in which the population is large enough to warrant such relief, ambulance stations should be established. In lieu of the latter, local physicians might be appointed in various parts of the city to respond in case of emergency, and to care for the injured person until the ambulance arrives, or to remove him, if necessary, in a hired vehicle to the hospital. In fact, a system of public compensation for services that might be rendered by any local physician called to the scene, might be devised. These measures would obviate the painful delays and unnecessary scandals associated with the crudity of the present system. The precarious conditions of life in a large city, particularly one like New York, which is continually in a process of transformation, with its congested traffic, uptown streets and innumerable other dangers, demand that a fair assurance of quick relief be accorded to the citizen who may be injured or suddenly stricken in the street.

Cholera at Manila.—Cholera has appeared in Manila in a sporadic form. One American woman and a man died on August 25. Two privates at Camp McKinley have also died of the disease. The surgeons of the Board of Health anticipate that the appearance of the disease will not have serious results.

ECHOES AND NEWS.

NEW YORK.

Cerebro-Spinal Meningitis.—The report of the contagious diseases in New York last week shows that cerebro-spinal meningitis is still present in the city. There were 14 new cases last week and 15 deaths. This is the time, if ever, while the new cases are so few, that isolation may be effectually practised and an attempt made at minimizing the danger of the recurrence of the disease that otherwise will be sure to take place next winter.

Typhoid Fever Situation.—There were 324 cases of typhoid in Greater New York last week. Of these cases 210 were in Brooklyn, 95 in Manhattan, 12 in the Bronx, 3 in Queens and 4 in Richmond. In the week before last there were 252 cases, of which 150 were in Brooklyn, while three weeks ago there were 259 cases. These figures would seem to indicate a big increase last week, but the Health Board officials say that of the 324 cases reported, 110 were old cases that had not been reported by the physicians, who have been very negligent about the matter. As a matter of fact, most of these 110 cases should be included in the reports of the previous two weeks. That would show that the disease is on the decrease, and this the department officials think is actually so.

Health Department Laboratory.—The fine new laboratory building of the Health Department will be opened and occupied in the very near future. This ornamental building has been in process of construction some time at the foot of East Sixteenth Street. It is attached to the old Willard Parker Hospital for contagious diseases, and simultaneously with its erection, several adjoining buildings have been put up, one a new scarlet fever hospital, and the other an administration building for the executive officers of the contagious disease hospitals, and for the accommodation of physicians and nurses attached to these hospitals. The laboratory is one of the finest municipal institutions of its kind. It is almost axiomatic to say that in all progressive cities it is recognized that the value of a Health Department is its ability to safeguard against contagious and infectious diseases and this is largely dependent on the efficiency of its bacteriological workers. New York City was among the first to establish a bacteriological laboratory. From an insignificant back room with a microscope and some cultures, the institution will be housed in an imposing six-story building. Every floor has been constructed so as to be adapted to research or chemical work. The laboratory is being thoroughly equipped. The chemical laboratory will be moved from its old quarters in the Department of Health Building, at Sixth Avenue and Fifty-fifth Street. Upon the methods of New York City's bacteriological laboratory have been modeled those of many similar laboratories in the United States and other countries. The first impetus given to the establishment of such an institution was in 1892. Cases of cholera had been brought to this port, and there was great public apprehension manifested. Dr. Hermann M. Biggs, the pathologist of the Health Department, urged upon the department the necessity of bacteriological diagnosis as the only certain method of identifying cases of this disease. After doing some singularly successful work in diagnosis of cholera, the laboratory began further investigations. Its facilities were cramped. Housed, as it has been, in a part of an old building at the foot

of East Sixteenth Street, it could not undertake too ambitious a program, for want of adequate equipment. Nevertheless, it made great strides in research work. In 1893 it investigated the bacteriology of diphtheria, and adopted methods for the bacteriological diagnosis of that disease. In the next year, it began work upon the bacteriology of tuberculosis, and also established the necessary plant for the production of diphtheria antitoxin. The free treatment of diphtheria in tenement houses, and the free distribution of antitoxin were begun in 1895. The effect of this work was instantaneous. The mortality from diphtheria was greatly reduced. In 1894, the number of deaths from diphtheria per 100,000 of population, in Manhattan and the Bronx, had been 158.4. In 1895, the number went down to 105.2; the next year to 91.2, and yearly has been proportionately going down. For the seven years before the free distribution of antitoxin in diphtheria cases was begun, about 37 per cent. of the cases in Manhattan and the Bronx were fatal; since then the proportion of fatal cases has been less than 11 per cent. The laboratory has also carried on investigations of the bacteriology of typhoid fever, rabies, and dysentery, bubonic plague, and other diseases; and is now, among other work, investigating the bacteriology of cerebrospinal meningitis. The research laboratory has done other important work. It found out from its studies that the virus of smallpox and vaccine could not be of a bacterial nature. It has studied tuberculosis cultures obtained from human beings and cattle. It has made great progress in methods of disinfection. One of its staff devised a machine by which formaldehyde gas could be generated with great rapidity and cheapness. These machines were installed upon the boats and at the ambulance stations of the Health Department. The laboratory prepares its own material for the enormous number of vaccinations the department makes yearly. This branch of the Health Department necessarily has always been in the hands of scientific men, and is not affected by political influences or changes.

PHILADELPHIA.

No New Case of Diphtheria Reported.—The fact that no new case of diphtheria was reported for last Wednesday has created some interest at the Bureau of Health. According to one of the inspectors, such an instance has not occurred in seven years.

To Investigate the Epidemic of Typhoid Fever.—Dr. F. C. Johnson, chief medical officer of the Department of Health, of Philadelphia, has been detailed by Dr. Dixon, Health Commissioner, to investigate the epidemic of enteric fever at Dundaff, Susquehanna County, and to limit its spread.

Antitoxin to Be Distributed Free.—Dr. Dixon, Health Commissioner, has decided to create two stations in each county of the State at which diphtheria antitoxin can be obtained free upon the presentation of a doctor's certificate. This step is regarded by physicians as a very important factor in the reduction of the mortality of this disease.

New Milk Law Necessary.—As the milk law stands at the present time it is necessary to prove that the dealer has personal knowledge that the milk which he is selling is impure; the food and dairy agents have found it very difficult to convict under those conditions and as a result have ceased to work. It is to be hoped that the Council will think it necessary to draw up and pass a bill which will en-

able inspectors to bring the dealers to a wholesome respect for authority.

Smallpox Hospital Destroyed.—The first move to occupy the new smallpox hospital was evinced by the burning of several of the buildings, once a part of the Municipal Hospital. Should more cases of smallpox be received than can be accommodated in the buildings remaining, they will be taken to the new hospital, although not completed. It has been suggested that the new hospital may never be used for the purpose designed, provided that these patients can be housed in temporary sheds, which can be destroyed from time to time.

Fire Destroys Part of the University's Buildings.—As a result of a fire the University of Pennsylvania has sustained a loss of \$40,000. The damaged buildings are in such condition, however, that repairs can easily be effected; at first it was thought that the microscopes and other scientific apparatus were destroyed, but investigation showed that the anatomical and surgical preparations which were lost can be replaced without much difficulty. The cause of the fire is not known, but crossed electric wires are thought to have given birth to the flames.

Additional Precautions Against Yellow Fever.—Dr. Henry Heller, of the State Quarantine Board, has adopted a method similar to that instituted by Dr. Quitman Kohnke, health officer of New Orleans, which consists of allowing barrels of stagnant water to stand around the quarantine station, assuming that the mosquitoes on board vessels will make for these to deposit their larvæ on the stagnant rain water. The barrels and their contents can be destroyed from time to time. The quarantine hospital of this city, and all of its beds, are screened so that it is almost impossible for mosquitoes to reach the patients, should they be attracted from the vessels by the stagnant water, thus provided for them.

Sanitary Expert Chosen.—Dr. Samuel Dixon, Health Commissioner, has announced the appointment of F. Herbert Snow as head of the sanitary engineering division of the Department of Health. Mr. Snow is a pioneer in the work of devising sanitary systems of sewage disposal, and Dr. Dixon believes his experience and his knowledge will be of inestimable value to the department in its dealings with municipalities and corporations to prevent and to remedy the pollution of the State water in the most efficient and economic manner. Mr. Snow is a member of the American Society of Civil Engineers, has had twenty-three years' experience, and has served more than fifty municipalities as consulting sanitary engineer. Atlantic City is about to rebuild and extend its drainage system under the plans mapped out by Mr. Snow.

Russell's Vegetable Compound as a Cure for Tuberculosis.—While many of the physicians of this city are sceptical in regards to the curative value of the compound, Dr. J. Solis Cohen has determined to give it a fair trial at the Chestnut Hill Hospital for Consumptives. He has no knowledge of the compound, but he has used Dr. Russell's emulsion of mixed fats extensively, and is able to say with good results. Vegetables are prescribed extensively by all physicians, but the mere fact that they are cooked may make them less efficacious. The *Bulletin*, in an editorial commenting upon the value of the compound, suggests that, owing to the fact that we so often see temporary improvements in patients who have at different times tried the "cures" for consumption, it would perhaps be better to wait longer than six months before expounding its value as a cure.

CHICAGO.

The Chicago Health Department Laboratory.—In his annual message to the City Council, April 10, 1905, Mayor Harrison showed the Health Department Laboratory to be a "money-maker," turning into the city treasury annually from \$40,000 to \$50,000 more than the cost of its maintenance, and urged upon the Council that some share of this excess, if not every dollar of it, should be used for its further development. The laboratory is more than a "money-maker!" Its value to public health and life in its supervision of food supplies—milk, cream, meats, water, ice, etc.—in its safeguarding against impure vaccine, inert antitoxin and other remedies; in its assistance to physicians in the diagnosis of the contagious and infectious diseases, and in many other ways, cannot be estimated in dollars and cents.

Pharmacists Pass a Resolution for New and Drastic Legislation.—The twenty-sixth annual meeting of the Illinois Pharmaceutical Association was recently held in this city. After a vivid presentation of some of the present evils of the pharmaceutical profession by George P. Engelhardt, Editor of the *Western Druggist*, the following resolution was adopted unanimously: *Resolved*, That we favor such legislation as shall require the proper public officer, in case of death ensuing from disease, or otherwise, under medical attendance when the physician has himself dispensed his own medicine, shall issue the death certificate instead of the attending physician, as now permitted by law. A second resolution was also unanimously adopted. This resolution was as follows: *Resolved*, that we deem the dispensing of pure drugs vital to the life and welfare of pharmacy and therefore approve any and all measures calculated to suppress the adulteration of drugs and medicines, and we most earnestly commend the relentless prosecution by the proper authorities of all druggists and others who shall be guilty of these subversive practices.

Tetanus Successfully Treated.—Dr. John B. Murphy reports the case of an eight-year-old boy who was admitted to the hospital with trismus, some contraction of the neck muscles with opisthotonus, seven days after cutting his foot on a piece of dirty glass. Under anesthesia some glass and pus were found in the foot wound, but cultures did not reveal any tetanus bacilli. The convulsions continued, so that on the following day he was given three full doses of antitetanic serum without effect, the convulsions becoming almost continuous. Two days later 16 c.c. of cloudy cerebrospinal fluid were withdrawn by lumbar puncture, and through the same needle there were injected 3 c.c. of the following solution, sterilized by boiling:

B-eucaine	0.09
Morphine sulphate	0.02
Sodium chloride	0.18
Distilled water	105.00

The patient slept four hours following the injection, and through the night slept one and one-half hours at a time. The spasms became shorter in duration, and there were only eight in the succeeding twenty-four hours. Then 15 c.c. of cerebrospinal fluid were drawn off and 4 c.c. of the above solution injected. Similar injections were made daily for six days, then on alternate days for six days. The spasms gradually ceased, the trismus relaxed and the boy was discharged cured three weeks after ad-

mission, or four weeks from the date of injury. Dr. Murphy considers eucaine much less dangerous than cocaine, and was particularly struck with the muscular relaxation that followed the morphine eucaine injections.

To Aid Insane Consumptives.—It has been decided to fight consumption in the insane asylums of Illinois, and two cottages for the isolation of tuberculous patients are now in the course of construction at the Watertown Hospital. These structures will effectually aid not only in the general care of the 1,200 patients, but in more humane treatment for those who in addition to their mental affliction are victims of the dread disease. The cottages were not provided for in the State appropriation, but this additional building was made possible by the economical expenditure of the general funds of the institution, it is said. One of the two cottages will be for male patients and the other for female. While the proportion of the tuberculous patients in insane hospitals is not high, the white plague is manifest sufficiently to warrant precautionary steps for the isolation of the disease. Every modern preventive and aid will be employed at the Watertown institution. The buildings will be well ventilated and absolutely sanitary. On all sides of each cottage will be a broad porch. Sections of the porches will be screened off so that the sufferers may sleep in the open air and gain the benefit of outdoor life. For sleeping outdoors in winter, provision will be made for tempering the extreme cold. A room fitted up in tiling will be used for spraying patients, and through the use of a huge atomizer the air will be impregnated with the fumes of Norway pines. Part of the porch will be enclosed with glass to gain the violet light which has proved an aid in the treatment of tuberculosis. A tent colony will be provided. Large yards will surround the cottages and provision will be made for six to ten tents in each. The amusement hall now being built at Watertown has dimensions 100 by 300 feet and is capable of seating 1,200 people, the present population of the patients. It will have four bowling alleys, billiard and pool tables, a swimming pool and a platform eighty feet wide. There will be a wide area within for general amusements for the patients. This hall is to be a retreat for the patients in stormy weather and entire wards will be entertained at one time.

Poisons and Druggists.—More care and discrimination in the sale of poisons and harmful drugs are necessary in this city. At present the conditions governing the drug traffic are notoriously lax since it is possible for a child to purchase morphine or cocaine wherever a druggist is unscrupulous enough to sell it can be found. To the discredit of the pharmaceutical profession it must be said that too many of these unscrupulous druggists abound. Realizing the need for maintaining public confidence in the profession, the Illinois Pharmaceutical Association is beginning a campaign for the passage of a law that will make the order of a responsible physician virtually necessary before harmful drugs can be purchased. This law, if effectually enforced, will undoubtedly serve to keep many people from obtaining drugs they had better be without. But if the druggists would but see and acknowledge the fact they have in their own hands the power to do much to remedy the drug evil in Chicago. The *Chicago Daily Tribune* in commenting on this proposed law editorially remarks that: "It depends on

a druggist whether a man, woman, or child can buy harmful drugs of him. In the better class of drug stores at present it is impossible to buy poisons without a physician's order. The reason why it is impossible to buy them at all without such an order is that all druggists have not the same high code of business morals. The remedy is obvious. The druggists must elevate the standard of their profession. So long as there are druggists who will take the drug-fiend's money, so long will the drug evil exist. When no druggist sells drugs except on a carefully investigated order it will cease. By adhering themselves strictly to the first principles of humanity and decency, by exposing those who are guilty of improper drug selling, and by prosecuting them with a relentlessness that will affect reform or drive them out of the business, the better class of druggists will more quickly and more effectively rid their profession of an odium and the public of a menace to health than by working for the passage of laws whose efficacy depends upon the manner in which the municipal authorities enforce them. A more stringent law is needed, but that alone will not suffice."

GENERAL.

Bubonic Plague in Panama.—A fatal case of bubonic plague in Panama was reported to the State Department Monday last. Some months ago one death by bubonic plague was reported from the Isthmus.

The American Roentgen Ray Society.—The sixth annual meeting of the American Roentgen Ray Society will be held at Johns Hopkins Hospital, Baltimore, September 28, 29 and 30. The Stafford Hotel has been selected as headquarters. The program includes foreign as well as American workers in this special department of medicine. All regular practitioners are eligible to membership, and are invited to attend the scientific sessions and view the exhibition of apparatus. Further information can be obtained from Dr. Russell H. Boggs, Secretary, Empire Building, Pittsburg, Pa.

Mississippi Valley Medical Association.—At the next meeting of the Association, to be held at Indianapolis, Ind., October 10, 11, 12, the annual addresses will be delivered by Dr. Arthur R. Edwards, of Chicago, and Dr. W. D. Haggard, of Nashville, Tenn. Dr. Edwards has chosen for the subject of his address, "Certain Phases of Uremia; Their Diagnosis and Treatment," and Dr. Haggard will discuss in his address, "The Present Status of Surgery of the Stomach." In addition to these addresses there will be the annual address of the President, Dr. Bransford Lewis, of St. Louis. A cordial invitation is extended to every physician in the valley to attend this meeting, for which a large number of interesting and valuable papers have been promised.

Lectures on Inebriety.—Dr. T. D. Crothers, of Hartford, Conn., Superintendent Walnut Lodge Hospital, has accepted an invitation to deliver the first oration in the Norman Kerr memorial lectureship, at London, Eng., October 10, 1905. Dr. Kerr will be remembered as an eminent London physician who has made a special study of inebriety, alcoholism and other drug disorders. He has written several excellent books on this subject, and has been instrumental in securing the enactment of laws for the control of inebriates and the promotion of hospitals for their care throughout Great Britain. He founded the British Society for the Study of Inebriety, in 1884, and this society and his friends have organized

a memorial lectureship for yearly orations on his life and work.

Tropical Medicine School.—Sir Patrick Manson, medical adviser to the British Colonial Office, in a speech before the board of directors of the Merchants' Association of San Francisco, outlined his theory that yellow fever may yet become a source of worryment there in the changed trade conditions which will follow the completion of the Panama Canal. He urged the futility of what now passes as quarantine either in yellow fever or the hubonic plague. Owing to the advantages that San Francisco possesses over London for the study of tropical diseases, an advantage due to the fact that it has a colony of ten thousand Chinese as well as many Japanese, Filipinos and Hawaiians, he suggested that a school should be established here for the study of tropical medicine. Sir Patrick is in San Francisco giving the Lane Lectures this year.

Cholera in East Prussia.—The official *Reichsanzeiger* of Monday last said that since August 16 seven cholera cases, three of which were fatal, have occurred in the Weichsel District, East Prussia. Traffic from Weichsel has been placed under medical and police control. Dispatches from Danzig say that the cholera bacillus appears to have spread further than the health authorities on Saturday supposed possible. A raftsmen has died of supposed cholera in the hospital at Bromberg, and two laborers of Fordon who drank of Weichsel River water suddenly became ill. One of them died later, supposedly of cholera. Three rivermen from Galicia have been attacked, presumably by cholera, at Graudenz. Apprehension is felt at Thorn and Bromberg and in the small river-towns, from the Russian frontier to Danzig, although nothing like a panic can be said to exist. The medical authorities are tightening their dictatorship, multiplying the stations along the river to prevent bathing or the use of water in any form, examining searchingly every person complaining of the least illness, and are urging upon all families within the district to use the recognized precautions. These measures have been effective enough so far as Prussian territory is concerned, but the physicians ask each other what is taking place beyond the frontier boundary stones. The water of the River Weichsel flowing out of Russia is contaminated, but no one knows whether few or many cases of cholera exist up the stream, or whether proper precautions are being taken. The situation in East Prussia is compared with that of the United States and Cuba in the case of yellow fever epidemics, but instead of a wide ocean channel flowing between Russia and Prussia, the latter's territory is continuous, and Prussia is powerless to enforce sanitation over the border.

Thomas Wilson Sanitarium, Baltimore.—The difficulty in establishing the use of cows' milk for infant feeding among the poorer people of the large cities is due to their inability to obtain a supply of good milk at a reasonable price and the trouble of keeping it fresh in their homes. It is a disgraceful fact that much of the milk bought by the poor is inferior in quality, lacks in freshness, is full of dirt and micro-organisms and contains chemical preservations. What the Nathan Straus Pasteurized milk depots are doing for the New York babies is being done for the babies of Baltimore by the milk dispensary of the Thomas Wilson Sanitarium, writes *Charities*. They are now entering upon the tenth month of the second summer of their service, and the results have been exceedingly gratifying. The dispensaries will be maintained throughout the coming year. All the milk is Pasteurized during the warm weather, and it, therefore, keeps

sweet for twenty-four hours, even where there is no refrigeration in the homes. The milk is produced at the Burnside Farm, bottled at the Walker-Gordon Laboratory, and contains less than 5,000 bacteria to the cubic centimeter when delivered to the various stations. There are at present five of these milk depots for dispensing at a minimum charge (somewhat less than actual cost) several modifications of milk, suitable for infants during their first year. The charge for a day's feeding for each of the modifications—five to eight bottles, according to the age of the child—is ten cents, payable daily on delivery at the station. This milk is not only for those infants who are already sick or ailing, but it is also, and quite as much, intended for any children whose circumstances prevent their securing a proper diet. An experienced nurse is in charge of each station, and wherever possible she keeps a record of the baby's weight and condition, and where it is desired she will visit regularly in the homes. The first summer five hundred babies received milk through this charity, and the results have been exceedingly gratifying. But four children on the rolls were lost during the winter—three of these from pneumonia and one phthisis. The Thomas Wilson Sanitarium has for many years been maintained each summer at Mount Wilson, on the Western Maryland Railroad, ten miles from Baltimore, where the children of the poor suffering from intestinal disorders have been treated. This year the sanitarium opened June 6, and will continue through August.

Fever Situation in the South.—The yellow fever has apparently improved in New Orleans, while the disease is reported to be gaining renewed energy in Louisiana outside New Orleans. The present total number of cases that has occurred in New Orleans is about 1,700, the number of deaths being about 230. In the city of New Orleans new foci are less numerous, but none the less evident. Surgeon White, Chairman Janvier, of the Citizens' Committee; Dr. Beverly Warner, in charge of the ward superintendents, and Dr. Souchon, President of the State Board of Health, went to Baton Rouge last week for a conference with Governor Blanchard. The trip was made at the suggestion of the Governor, who desired to know at first hand the exact status of all departments of the work. Since the beginning of the yellow fever, the Governor has been unable to put foot in New Orleans. Quarantine has penned him up in Baton Rouge, and he has been compelled to confine himself to telegraphic and telephonic communication. A feature of the situation that is attracting attention is the fact that what are termed centers of infection now exceed the number of cases under treatment. It is an encouraging feature because it is an indication of a slow extension of the fever, which is particularly true of the quarter above Canal Street. It is hoped soon to reduce the number of disease centers. Ordinarily, it would be assumed that a center would become extinct in twenty days, the length of time within which the *Stegomyia* should furnish fresh cases in any neighborhood which has been infected. In order to take no chances, health officers will not cancel any disease centers until thirty days have elapsed. Large quantities of rock salt have been purchased by the Federal authorities with a view to salting stagnant gutters and pools. The salt is intended to destroy the pools as breeding places for mosquitoes. A freshly infected spot in St. Bernard parish was announced last Wednesday. It is at Terre aux Boeufs, the parish seat. Health Officer Meraux found five genuine cases and three that were suspicious. The town and its vicinity were invaded

by Italians after the fever appeared at New Orleans. In Leeville, near the mouth of Bayou Lafourche, nearly two-thirds of a settlement of three hundred persons have been infected and several deaths have taken place. Dr. Devron is the only physician there, and his difficulties are increased by the fact that the settlement lies on two banks of a rather wide stream. Assistance is being asked by other points in the matter of physicians and nurses. There is a steady increase of disease in Hanson City. In St. Charles parish the infection is increasing and is beyond the control of the force thus far sent there.

Hospital for Constantinople.—In the city of Constantinople, writes the *Evening Post*, with 1,250,000 inhabitants and surrounded by a district containing a population of 24,000,000, the trained nurse is practically unknown. Nor do the native physicians practise surgery, as the consequences of a case that ends fatally are too unattractive for a doctor to take the chances. The American Hospital and Training School for Nurses, in Constantinople, is endeavoring to awaken the city to the necessity of caring for the sick scientifically. Dr. Thomas Spees Carrington, the physician in charge, received recently from John G. A. Leishman, United States Minister to Turkey, a letter indicating the high opinion of the movement entertained in American circles there. Mr. Leishman said: "I am very glad to learn by your letter of July 18 that you have made substantial progress in your efforts to establish an American hospital and training school for nurses in Constantinople. An 'up-to-date' American hospital will prove a boon here, and I am sure that all your friends will welcome your return to Turkey as chief of the hospital staff; and I am quite of the opinion that no greater humanitarian or philanthropic enterprise could be undertaken than the establishment of a training school for nurses, as the customs of the country render the nurse in most cases a more important factor in the family than the doctor, and while there are many doctors, a nurse of any kind is rare and a good one almost impossible to find. The only criticism I venture to offer is that I think you are starting out upon too modest a basis, as an institution of the kind mentioned should, in my opinion, be placed at the beginning upon a good solid basis, not only with enough money to erect and equip the necessary building, but also with a sufficient endowment to guarantee its proper conduct." To foreign residents, as well as the natives, is the training of nurses in the city a matter of vital concern, and the school has among its trustees men whose names guarantee its sincerity of purpose. They include William Ives Washburn, of New York, president of the institution; Dr. Henry O. Dwight, missionary and author; Edwin H. Baker, junior partner of the New York firm of Bliss, Fabyan & Co.; the Rev. Dr. Charles H. Richards, secretary of the Congregational Church Building Society; John Beverley Robinson, and Dunham Wheeler, the New York architects, and Ernest Hamlin Abbott, associate editor of the *Outlook*. Checks sent as gifts to the hospital and training school should be made payable to Brown Brothers & Co., bankers, No. 59 Wall Street, New York.

The Modern Juggernaut.—The *Railway Gazette*, writes the *New York Times*, tabulates twenty-three collisions of railway trains and twenty-five derailments during July. There was no notable disaster, yet there was an average of a death every day in a month, which compares favorably with its predecessors. One collision was caused by a train being ahead of time. A misplaced switch threw one train into another, and

many deaths were averted only by the chance that a "dead" locomotive took up the shock. Many will compare these figures with the annual reports in England and the United States, which have just appeared simultaneously, and with the mortality of battles. According to the Inter-State Commerce Commission, more were killed and injured on railways last year than at Gettysburg or Mukden. The fatality ratio of passengers to accidents was 100 times higher here than in England. We have seventeen times more employees and 600 times more casualties among employees. In England last year the collisions and derailments totaled 217, which happened to be the precise average for twenty-four years. Last month there were forty-eight collisions and derailments, and there will be over 600 this year in the United States. We have more miles of road, and more trains, to be sure, but the disproportion is not creditable. We would not minimize the facts. They speak for themselves. Americans think there are too many such occurrences in the United States, while the English are well satisfied with their record. Something may therefore be said about the comparison. Most of the English facts are taken from a report by Consul Mabin, at Nottingham. He accepts the official Board of Trade figures without examining or criticizing them. It is hard to find fault with him for that, but we find in *The Press'* London letter an analysis of the figures more to our liking. It seems that in 1901 one person was killed to each eighteen miles of track in England, and one to each eighty-four miles in the United States. One was killed to each 924,000 passengers on British railways, and one to each 2,129,382 on American. Moreover, the figures in England are treated to a process rather putting our own able Mr. Holmes to shame as a manipulator. It seems that the facts are first made up in a "preliminary return," which is not published. This return for 1904 showed 1,158 deaths and 18,749 injuries. But the returns as published show six passengers "killed through train accidents." This is the basis of Consul Mabin's statement that the deaths were 1 in 199,758,000 journeys. But there were 109 other deaths of passengers, nevertheless. No less than thirty-three lost their lives through an accident impossible on American railways. That number, 1 in each 39,000,000, fell out of compartment doors. They were killed all right, but they were not killed in "train accidents." The report told the exact truth, but it is as misleading as diplomatic reports, which are so phrased as to deceive without enabling the diplomat to be called a liar. For some obscure reason the British reports do not include commuters. Upon the average of thirty years British railways kill twenty-three passengers yearly. It is a shameful comparison with the American record, but then our figures include commuters. It would almost seem as though our accident statistics were made up by yellow journals for purposes of their own and as though British statistics were made up by and for British railways, also purposes of their own. For our own part, and with this opinion the *MEDICAL NEWS* most emphatically coincides, we think too many are killed in either country. We have not the slightest tolerance for grade-crossing horrors, nor for overworking single-track systems, nor for parsimony productive of inferior apparatus or employees. We think any comparison unfair under conditions so different as between England and the United States, or as between our own older and more thickly settled communities and our crude railway enterprises in the West. We cannot believe that our apparatus and administration are inferior upon any fair comparison,

and we should not shrink from placing equally truthful figures side by side. We do not question the good faith in which the British figures are compiled or presented to us, but it would seem that the methods are so different that unwarranted conclusions are suggested. Our figures are dreadful, but not so dreadful as they seem. The British figures lull into a false security. The great crime is in the killing. It boots little what the percentage per mile is.

SPECIAL ARTICLE.

BYWAYS OF MEDICAL LITERATURE.—XXV.

MEDICINE AND MEN OF LETTERS.

It is a curious fact, writes the *British Medical Journal*, that great writers, speaking generally, have been no lovers of the medical profession. This is doubtless the reason why doctors for the most part cut so sorry a figure in literature. Scribes of all sorts take a special pleasure in girding at them. Shakespeare, indeed, used them gently, as though he loved them. Although the medicine of his time was a tempting subject for the satirist, his large mind saw the nobility of its aim, which to less penetrating and sympathetic eyes was disguised by the poverty of its outward apparel, and divined the possibilities of development that lay hidden in the mass of error and superstition of which it mainly consisted. But Petrarch wrote treatises against medicine and its professors; Montaigne laughed at them; Molière put them on the stage as fixed figures for the scorn of time to point its finger at; Rousseau vilified them; Voltaire is the author of the famous saying that the healing art consists in pouring drugs of which the physician knows little into a body of which he knows less; and Carlyle said he might as well confide his sufferings to the hairy ear of a jackass as to that of a physician.

Is this attitude of mind due to intellectual superiority or simply to the conceit and egotism which are pretty constant ingredients in the composition of genius? To the doctor all men are equal; they are simply cases, and the case of a costermonger may be more interesting than that of a poet or a philosopher. Yet philosophers and poets probably think that their ailments should be treated as exceptional because they who suffer from them are exceptional persons. Flaubert—himself, by the way, the son of a distinguished surgeon—is said to have hated doctors because they treated him as a *bourgeois*.

It is, indeed, the literary people who are largely responsible for the distrust of the medical art that so many persons who, in Beatrice's phrase, "profess apprehension," pretend to feel. Whether he be moved, like Molière, by resentment at the failure of medicine in his own case, or like Swift, by fierce indignation which tears his heart, or like Carlyle, by what the old physicians called "black bile," the writer speaks *urbi et orbi*; the doctor in his secret ministry has only the few anxious watchers by the sick bed for an audience. The contest being conducted on terms so unequal, what wonder is it that the doctor gets the worst of it?

We have lately come across a passage in the *Journal Intime* of Frédéric Amiel, in which the Genevan professor of esthetics and philosophy admired of Matthew Arnold and so many other superior persons, expresses his views on doctors. "Why," he asks, "do doctors too often give bad advice?" His reply to his own question is that it is because they do not sufficiently individualize their diagnosis and their treatment. "They class all their patients in an allotted drawer of their nosology, and yet every patient is a *hapax*" [in grammatical terminology a

hapax legomenon is a word or a construction of which there is only a single example.] How, he goes on to say, can so rough a sifting lead to judicious treatment? "Every disease is a factor simple or complex multiplied by a factor which is always complex, namely, the individual who is the subject of it, so that the result is a special problem, always requiring a special solution, especially the further removed one is from childhood and from rustic life." To us, of course, all this is the merest commonplace, but Amiel gives forth his platitudes as if he were Sir Oracle proclaiming a new gospel. He goes on to say that the chief fault he has to find with doctors is that they disregard the true problem "which is to grasp in his unity the individual who needs their care." Their methods of investigation are, he complains, much too elementary; "a physician who does not read one to the bottom does not know the essential." A doctor after his heart should have a profound knowledge of the life and the soul, divining intuitively a disorder or suffering of any part of the being, and restoring peace by his mere presence. Such a doctor, we are assured, is possible, but most practitioners lack the higher and inner life; they know nothing of the transcendental laboratories of nature. To Amiel's mind they are "superficial, profane, strangers to the divine, destitute of intuition and of sympathy." He concludes that the model physician should be at once a genius, a saint, and a man of God.

All these noble sentiments and fine language translated into common speech mean nothing more than that Amiel had been treated by his doctor as a man of mould like other folk; he doubtless gave the sensitive philosopher mere vulgar pills and potions, whereas he should have seen by intuition that there was a disorder of the finer feelings, for which more ethereal medication was indicated.

We hold strongly that there is in the practice of medicine, in the highest sense, much more than pills and potions, more even than the wisest physical therapeutics. We quite agree that the practitioner will find much to learn in the transcendental laboratories of nature; to him more than to any other, nothing human must be foreign. It often falls within his province to treat the spiritual or mental condition of his patient. But he must not on that account neglect the humbler, but equally essential, part of his art. If in trying to influence the soul he forgets to treat the body, he will find himself in the position of the astronomer who, in gazing at the sky, fell into a ditch. If all doctors are to be geniuses, there will be no ground for further complaints as to the overcrowding of the profession. But will the last state of sufferers from disease be better than the first? It would assuredly be well if all doctors were saints and men of God, but genius is as much out of place in the sick room as Sir Frederick Treves holds it to be in the operating theater. Genius is of its very nature soaring and cares nothing for the small things that make up the greater part of human life and that are of such infinite importance to the sick. On the other hand, medicine, which, unlike the law, must concern itself about the least, is patient, plodding, and pedestrian. Genius practising medicine would be like Pegasus between the shafts of a milkcart.

CIGARETTES.

In De Quincey's essay on "Murder as a Fine Art," it will be remembered, it is pointed out that a murderer is likely to descend to almost any depths of criminality. Let him overindulge his desire to kill people and soon he finds himself tempted to commit robbery. From robbery he descends to drinking and Sabbath-breaking, and in time he becomes a victim to incivility and procrastina-

tion. So far almost any one is sure to agree with De Quincey. The Indiana Legislature, however, has imagined a blacker depth into which your skilful murderer might, unless checked by law, descend. He might become a cigarette smoker. It is no news, of course, to say that one may not smoke cigarettes in that State without breaking the law. What may prove of interest are scraps of evidence from the heap piled up before the lawmakers to hasten the passage of the law. Judge Stubbs of the Indianapolis juvenile court read a paper on "The Evils of the Cigarette" before a recent meeting of the Indiana State Teachers' Association which throws De Quincey's conceit far into the background as a real thriller. He wrote after an experience of twenty months on the bench of the juvenile court. "In that time," he said, "I have had before me 1,208 boys and girls—mostly boys—all of whom have been charged with offenses against the law. These charges have covered the entire list of offenses known to the law in Indiana from the most trivial misdemeanor to the greatest of crimes, including petit larceny, grand larceny, house-breaking, burglary, arson, forgery, assault and battery with intent to kill, assault upon girls with criminal intent, manslaughter, murder, and that other nameless crime for which negroes have so often been burned alive in some of the Southern States.

"In inquiring into the causes that have brought about such a great increase in the number of offenses against the law in the last few years by boys, I have reached the conclusion that, aside from the frailties and weaknesses that afflict our common humanity, and which are likely to blossom and develop into crime, especially where there is a lack of parental control, or where the parents themselves belong to the ignorant or vicious classes, by far the most potent factor is the cigarette habit."

It is a grave charge to bring against the cigarette, but the judge seems to have had no trouble in supporting it with plenty of evidence outside his own courtroom. In the campaign against the "coffin nail" the teachers in the lower schools "from Michigan to Georgia, and from New England to California" were appealed to for testimony. The speaker singled out the reply of a young woman teacher in an Indiana high school as representative. She wrote that the boy who is a victim to the cigarette habit "is frequently late and irregular in his attendance. He is restless. . . . He does not like to study, and by and by he comes to the place where he tells the truth when he says that he cannot study. His moral sense becomes perverted. . . . His moral standard is low in all respects. He will turn the most lofty sentiment in literature to vulgarity. . . . He is slouchy in his manner, his clothing, and his talk." There were other letters heaped upon the mass, and the judge went down into the records of his own court to bring forth the tottering, shaky specimens of cigarette-damned youth. As a final clarion call to the teachers to save Indiana from the terrible curse, some of Judge Stubbs's closing sentences should be preserved and pasted into De Quincey's essay: "Something must be done to save the youth of our land. . . . Some of us who are yet living have stood on the red line of battle at a time when it seemed to us that the whole world was filled with horror and despair, but now the wildflowers bloom in peace on the bloody field and above the crushed skeleton. Peace and prosperity now reign where once the bursting shells and rattling musketry carried death and destruction to friend and foe. But for moral degradation there is no reviving spring. Let the boys of our country become corrupted and their manliness destroyed, the hope of the nation poisoned at its fountain head, and the abomination of desolation spoken of by Daniel will be upon us."

SIR RICHARD OWEN.

In Sir Mountstuart Grant Duff's *Notes from a Diary 1886-8*, there is frequent mention of Sir Richard Owen. Once the famous anatomist told him what a happy use he had made of one of Milton's sonnets. He became a member of that highly select body "The Club" much earlier than most of the few who are chosen for admission because Johnson had expressed a wish that one member should be a physiologist. Hardly had he been elected when he was placed in a great difficulty. The opinion of the Club was asked as to whether a representation of Cromwell should be introduced in the new Houses of Parliament. Various views were expressed, when Lord Aberdeen, who was Chairman, said, "Well, we'll take a vote, and we'll begin with the youngest member." Owen extricated himself from an embarrassing position by saying, "Whatever we may do, we cannot raise for Cromwell a monument at all equal to one he has got already." The other members looked surprised, and he was asked to what he alluded, whereupon he quoted Milton's sonnet. The old man added that he was never so well repaid for learning a piece of poetry by heart. The moral is obvious, but we may be allowed to express a slight feeling of surprise that no one in a body, which is nothing if not literary, should have understood the allusion. On another occasion the diarist found Owen reading a volume of English letters, the frontispiece of which was a portrait of the Countess of Suffolk. Speaking of his memory, he said he found a difficulty sometimes in remembering ordinary names, but none with the pentasyllabic or hexasyllabic names of extinct monsters. Only that morning he had finished a paper for the Royal Society upon one of these—a creature of the crocodile kind, but without teeth—sent to him from Lord Howe's islands. Asked as to the personal appearance of Buckle, the author of the *History of Civilization*, Owen startled his questioner by answering, "Like a young Gibbon," an expression which, coming from the lips of the great zoologist, seemed to imply a resemblance to our quadrumanous relative. Owen, however, explained that he meant the historian. At another visit very near the end of Owen's life, he mentioned a curious instance of heredity in his own family. His grandson, then an undergraduate at Cavendish College, Cambridge, had developed so remarkable a turn for playing the organ that the authorities were able to dispense with the services of a regular organist. Professor Owen's mother was for several years organist at Ormskirk Church, and her father again was long organist at Lancaster. Their name was Parrin, and they came of ancestors who took refuge in England after the Revocation of the Edict of Nantes.

THOREAU, THE OPEN-AIR CULT AND TUBERCULOSIS.

Perhaps no American philosopher cultivated the open-air cult with greater zeal than Thoreau, who even went so far as to get into trouble by relapsing, as W. W. Godding remarks (*American Psychologic Journal*, 1883), into a state of nature on the shores of Walden Pond, yet Thoreau died at quite an early age from tuberculosis. Thoreau's early death, according to Elbert Hubbard, "was (Little Journeys, December, 1904) the direct result of his invariable and reckless lack of common prudence.

That which made him live in the literary way curtailed his years. The man was improperly and imperfectly nourished, physically. Men who live alone do not cook any more than they have to. Men and women both cook for emulation. Thoreau was such a pronounced individualist that he cared for no one but himself, and he cared for himself not at all. It is wife, children, and home that teach a man prudence and make him bank

against the storm. 'At Walden, no one bothered me but the State,' said Thoreau. If Thoreau had had a family and treated his household as he treated himself, that scorned thing, the State, would have stepped in and sent him to the workhouse and his children to the Home for the Friendless. If he had treated dumb animals as he treated himself, the Society for the Prevention of Cruelty to Animals would have interfered. The absence of social ties and of all responsibilities fixed in his peculiar temperament an indifference to hunger, heat, cold, wet, damp, and all bodily discomfort that classes the man with the flagellants. He tells of whole days when he ate nothing but berries and drank only cold water; at other times, of how he walked all day in a soaking rain, and went to bed at night, supperless, under a pine tree. Emerson records the fact that on long tramps Thoreau would carry only a chunk of plum-cake for food, because it was rich and contained condensed nutriment. A few years of plum-cake, cold mince pie, and continual wet feet will put the petard under even the stoutest constitution. During his shanty life Thoreau was imperfectly nourished, and for the victim of mal-assimilation, tuberculosis hunts and needs no spy-glass. In childhood Thoreau was frail and weak. Outdoor life gradually developed on his slight frame splendid strength to do and endure. He could outrun, outrow, outwalk any of his townsmen. In him developed the confidence of the athlete—the confidence of the athlete who dies young. Thoreau was an athlete, and he died as the athlete dieth. Irregular diet and continued exposure did their work—the vital powers became reduced, the man 'caught cold,' bronchitis followed, and the tubercule laughed.

The culture medium here portrayed is an excellent one for tubercle bacilli to infect, but the origin of the bacilli is, from the ordinary Lives of Thoreau, not so clear. One of the great philanthropic agencies of the day was the "underground railroad," which conveyed fugitive slaves from the United States to Canada. Many of these contracted tuberculosis on the way from the South, and infected their hosts at the various "stations" on the "railroad." Thoreau was an active agent, and his home was a "station." It is hardly surprising, therefore, that he should have contracted tuberculosis from the slaves he aided, since other than in the Latin countries very little attention was paid to infection by sputum, despite the fact that in Scotland and in the Irish school of physicians, influenced by it, consumption was as early as 1722 regarded as an infection. Many of the precautions urged now were carried out in Italy sixty years ago. The great development of tuberculosis among negroes since the war, under the unfavorable conditions of self-protection, indicates the dangers to which the agents of the underground railroad were exposed by their charges. The slight frame of Thoreau hints at the inheritance of the paratuberculosis defects pointed out by de Giovanni, who found that particular nervous states existed in the descendants of the tuberculous, whom he (*Bulletin Méd.*, 1887) divides into erethists, torpids, and energetics. There is usually a diminutive heart, whose right ventricle has comparatively exaggerated dimensions, while the arteries have lessened caliber. The victim of the torpid type is usually coarse-featured and coarse-skinned, with peculiarly unstable mentality; slowness of comprehension is combined with power of continuity of thought; at times mental apathy alternates with quickness of perception. Decided exaggeration of the lymphatic system with deficient functionation occurs, resulting in fitting a soil for germs. In other respects the torpid resembles the second type, the erethistic or nervously fussy type. This is generally characterized

by the presence of a clear complexion, a fine skin, and features well cut and often beautiful. The lips are red and the teeth pearly white, though liable to early decay. The eyes are large and full, the pupil being widely dilated, and the white of the eye beautifully clear. The eyelashes are long, curved and silky, and the blue veins show distinctly through the clear, thin skin. The bones are light, the hands and feet well formed, the stature often tall, and the whole figure slightly and gracefully built. The erethists generally remain spare, and have a strong dislike to fatty food. They are vivacious and excitable, and the intellectual faculties are often highly developed. At an early age they show marvelous activity. The regularity with which such precocious tuberculous children die has given rise to the proverb anent exceptionally clever children that they are "too wise to live long." Wanting in stamina, they are incapable of prolonged exertion either of mind or body, and break down under conditions which would not prove injurious to the healthy. They are continually taking "cold," and are prone throughout life to affections of an inflammatory character. Multiple and frequent pregnancies occur. The children, deficient in vitality, are carried off in numbers during infancy by convulsions, brain fever, water on the brain, exhaustion, diarrhea, teething and other ailments, or succumb at the second dentition or at puberty. A small proportion reach maturity. Few live beyond thirty-five or forty years of age. However brilliant intellectually, they are equally emotional, impressionable and impulsive. There is a marked absence of mental stability. They are suspiciously capricious. The great secreting and eliminating glands frequently undergo perversions.

Both these types were peculiarly frequent in New England. The paternal ancestors of Thoreau came from the Island of Jersey; the maternal were of Puritan stock. The erethistic type appears in Thoreau's suspicious zoophilism, which led him, as his lately published journals show (*Atlantic Monthly*, January, 1905), to prefer the society of a woodchuck to his friends.

SOCIETY PROCEEDINGS.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, held April 12, 1905.

The President, Harlow Brooks, M.D., in the Chair.

Demonstration of a Case of Hydatid Cysts of the Liver.—Dr. J. E. Welch demonstrated a case of hydatid cysts of the liver. The subject from whom the specimen was taken was a native of Switzerland, forty-nine years of age. It was not known how long he had been in this country. He had been admitted to Bellevue Hospital on March 6. The family history was negative except that his brother had tuberculosis. He had been in the habit of drinking about five or six glasses of whisky daily and as much beer, but was not a drunkard. His personal history showed that he had none of the ordinary diseases of childhood. He had had pneumonia about ten years before and since that time had had a cough. Eight years ago he had an attack of rheumatism, which was repeated the following year. For five months before admission he had been coughing constantly, and raising mucopurulent sputum, which was never blood tinged. Three days before admission he had a sudden sharp pain in the right axillary region, followed by chilly sensations, but no distinct chill. Physical examination showed a well-developed, fairly well-nourished man. The action of the heart was weak.

There were no murmurs. The right chest showed hydropneumothorax. The urine had a specific gravity of 1.024 and was negative. The sputum contained many tubercle bacilli. The temperature ranged from 98° to 103° F. for the first two days; on the following three days, which included the day of death, it ranged from 96° to 101° F. The pulse ran from 96 to 140. At autopsy the right pleural cavity contained two liters of purulent fluid and air. The right lung was compressed to a mass about the size of the hand. The left lung was consolidated and contained many small tuberculous cavities. There was general congestion throughout the abdominal organs. The left lobe of the liver was represented by a narrow margin of shriveled tissue. Sections showed that the right lobe was congested and fatty. In the left lobe there was a cavity, eight cm. in diameter, having a thick fibrous wall, which contained a large echinococcus cyst. The cyst wall was folded upon itself on account of the confined space. There was no fluid present. No scolices were found. The diagnosis was made by the outer laminated and inner granular layers of the wall as seen under the microscope. The liver and a portion of the cyst wall were exhibited before the Society.

A Case of Eclampsia with Rupture of the Diaphragm and Stomach.—Dr. Welch also reported this case. No details of the clinical history were given. The patient was a woman twenty years of age. She was delivered at the hospital and two or three days after was taken with eclamptic seizure. She had several seizures, one after the other, in rapid succession, for two or three days, and finally died in a convulsion. At autopsy the body showed a slight diffuse jaundice. The pericardium had several small punctate hemorrhages. There were small hemorrhages in both lungs. The liver was slightly increased in size and yellow in color. All the other organs were congested. Sections of the liver showed yellow areas, some fused, but for the most part markings were irregular streaks of yellow. The central veins were somewhat dilated. There was general disintegration of the liver cells. In the cells were large deposits of fat, some in the shape of large globules. The kidney showed extensive parenchymatous change. There were two ruptures in the diaphragm on the right side, one around the left margin of the esophagus, which admitted the passage of three fingers, the other about two inches to the left of the esophagus. Here the muscle fibers were separated so far as to admit the passage of three fingers. The stomach was ruptured in three places along the lesser curvature, and the contents had been forced through the diaphragm. There were about 500 c.c. in the left pleural cavity and 200 c.c. about the spleen. The contents were sterile, contained blood, and gave an acid reaction. The rupture was evidently very recent, as there was no inflammatory reaction in the peritoneum or pleura. Sections of the liver and kidneys were shown.

Dr. Harlow Brooks, in the discussion, said that so far as he knew this was the first case reported in this country of rupture of the diaphragm from eclampsia. He had been led to believe that it was very rare.

Pronounced General Osteoporosis.—Dr. E. S. McSweeney reported a case of osteoporosis. The entire skeleton was exhibited. It was that of a fairly well-nourished woman, forty years of age, five feet seven inches tall. Its weight was about

seven pounds. The bones had first attracted attention in the dissecting room two months after death, so that there was no record of their more recent state, nor could any history of the case be obtained, other than that the patient had died of pneumonia. Some of the vertebrae being the merest shells of compact bone tissue were almost completely destroyed in handling. As a whole, the skeleton showed very little change in gross outline, except a moderate cervicodorsal kyphosis. There were no fractures, ankyloses, or similar lesions. The individual bones without exception showed very considerable loss of substance, chiefly of the cancellous tissue. The compact tissue was defective here and there, evidently from an extension of the process. The skull vault was almost sieve-like; the scapulae hardly thicker than heavy paper and extraordinarily translucent; while in the long bones the shafts were chiefly affected. On looking over the very meager literature bearing on such conditions, Dr. McSweeney had found but few cases reported. In these changes were mostly local and not so extensive as seen in the specimen shown. As a general process osteoporosis was evidently rare and usually ascribed to senility or osteomalacia. The skeleton exhibited showed none of the characteristic senile changes, and the age of the woman excluded such a possibility. Distortions of the bone were more characteristic of osteomalacia than of osteoporosis, whereas in the present instance the reverse was true. The case was interesting surgically in that so extensive a lesion could exist in a woman of this class without the occurrence of a single fracture and with so little deformity. She had probably had to make her own living and, judging from the fact that she had been committed to the workhouse, had led a rather hard life.

Dr. P. W. Nathan, in the discussion, said that it was difficult to say much about the case, since there was no history. The condition of the ribs and the spine and the condition of the neck of one femur reminded one of cases of osteomalacia. There had been cases of osteomalacia reported where the disease came on very suddenly and might involve the skeleton like this in a short time. Osteoporosis is not a disease as such; it is associated with many disorders of the bones. In this case he believed that the bones were probably soft in their original condition. Naturally after all the soft parts were removed, they appeared much more brittle than they were during life. In osteomalacia there is always osteoporosis if the new formed non-calcified osteal tissue is removed, as was done in the present instance. He considered this a case of osteomalacia of some kind. The femur particularly was interesting.

Dr. Harlow Brooks said that he was much interested in osteomalacia at present, as he had been studying the disease in the primates, where it was very frequently found. He had never seen anything which approximated the changes in these bones. He had not seen a condition of the skull such as was found here, even in the fragile bones of the monkey. The condition of the thorax looked exactly like osteomalacia.

Dr. Nathan said that he thought the disease as found in monkeys was not exactly analogous to the osteomalacia found in man. It was more analogous to rickets.

Dr. Brooks stated that osteomalacia and rickets in the primates are two distinct and easily differentiated diseases.

The Addition of Marble or Other Calcium Compounds to Nutrient Broth: A Reliable and Convenient Method for Growing the Pneumococcus.—Dr. Charles Boldaun demonstrated cultures of the pneumococcus growing in marble broth. During the course of his work with the pneumococcus he had felt the need for a fluid medium like plain broth in which there would be no body fluids. Plain broth was almost worthless, for growth seldom lasted for more than one or two generations. He had at first tried to neutralize the broth to phenolphthalein, but had found that did not work. The addition of glucose to the broth did cause luxuriant growth of the pneumococcus, but the production of acid was so great that the cultures died off quickly. Attempts were then made to neutralize the acid formed by the addition of calcium carbonate. Experiments were made with glucose broth with calcium carbonate and with plain broth with calcium carbonate. The glucose broth proved to be unreliable, but the plain broth with calcium carbonate gave a good growth every day. In testing the acid in the various media it was found that cultures in plain broth with calcium carbonate usually remained neutral to phenolphthalein. He had at first thought that the calcium carbonate had neutralized the acids and that this was the reason for the luxuriant growth. It was, however, found that the cultures in the medium containing glucose died off very quickly and that the presence of calcium carbonate did not increase the viability. In plain broth cultures with calcium carbonate alone, the cultures in one case were still alive at the end of thirty days. When plain broth was inoculated there was often not only no increase but a positive decrease of organisms, whereas when calcium carbonate was present there was growth from the start. This fact could not be reconciled with the assumption that the calcium carbonate acts only by neutralizing the acids formed. Tests had therefore been made with other calcium salts, chloride and sulphate. These indicated that it was the calcium element, in part, at least, which made the pneumococcus grow in this broth. Cultures of the pneumococcus grown in this broth lost little or none of their virulence. In preparing the marble broth the marble was broken into small pieces, then washed out in test tubes. The tubes were filled in the usual way and sterilized. The cultures remained viable fully as long as ascitic broth cultures. The growth was not quite so profuse as in ascitic broth, but was a marked growth. In the cases in which marble broth can be employed, its use obviates the tedious collection of ascitic fluid and the careful Pasteurization which ascitic broth requires.

Dr. F. C. Wood, in the discussion, said that he had been much interested in Dr. Boldaun's remarks on the use of calcium carbonate. It had been employed by Dr. Hiss for a year and a half in keeping his cultures alive for a long time. Dr. Hiss had found it important to see that the pneumococcus flasks were shaken up every day. This brought the acid into contact with the calcium carbonate.

Dr. Boldaun said that the point was not the neutralization of the acid, because when glucose was present the culture died out as fast as without the calcium carbonate. The important point was that the pneumococcus needed the calcium salt in some form or other.

A Method for Microscopic Identification.—Dr. Leo Buerger presented a method for the microscopic identification of colonies of the pneumococcus

when grown on the surface of meat infusion serum agar or, preferably, meat infusion glucose serum agar, containing 1.5 to 2 per cent. peptone and 2.5 per cent. agar plus one-third of its volume of a high proteid ascitic fluid. The surface colonies of the pneumococcus show a circular, disc-like, flattened growth with a regular contour. When viewed from above, the surface appears glassy, with often a slightly depressed center. When looked at from the side or by transmitted light they appear as distinct milky rings inclosing a transparent center. The ring colonies may vary considerably in their size, but they can be detected in colonies which are not over 1 mm. in diameter. Occasionally the characteristic appearance is not observed until forty-eight hours have elapsed. This appearance, so far as the speaker was aware, was diagnostic of the pneumococcus. It must be differentiated from two other types of colonies, first, from those with a prominent periphery occasionally met with in the case of streptococci; secondly, from those colonies which show rings only by transmitted artificial light. The former, if carefully examined, will be seen to possess a distinct nucleus which is never seen in the characteristic pneumococcus forms. The latter is not to be mistaken if it is studied by reflected light. The center of these streptococcus colonies is raised above the periphery and when held up against an artificial light appears to have a bluish peripheral ring.

Mycotic Aneurisms.—Dr. E. Libman presented three cases of mycotic aneurisms. The first case was sick about a year previous to admission with chills, fever and sweating. This had lasted for about two weeks, and the symptoms had not recurred until about a month before admission to the hospital. After entering the hospital he had a feeling of weight in the epigastrium after eating and pains radiating to the back and between the shoulders. The patient lost forty pounds in a few weeks. Temperature on admission was 99.6° F. Physical examination showed nothing except an indistinct small mass felt just to left and below the umbilicus, with an enlargement of the heart and a systolic murmur at the apex transmitted to the left and also over the arch of the aorta and the lower third of the sternum. While in the hospital the temperature rose to 103° F. Leucocytes were 25,000, hemoglobin, 33 per cent. Exploratory laparotomy revealed a small aneurismal sac lying in the mesentery near the root. At postmortem there was a marked hypertrophy and dilation of the left ventricle with atheroma of the mitral valve which showed recent vegetations, and two aneurismal pouches on the edge of the flap. At the hilum of the spleen an aneurism of the splenic artery was found measuring about 6 cm. in diameter, just below which there was a sacculatation of about 60 c.c. In the mesentery there were two well developed aneurisms, one small area of ulceration and two beginning aneurisms. The ulcerated area in the vessels and the well developed aneurisms showed a distinct sharp break in the intima and a tendency to localization at the bifurcation of the vessels. The lesions were all situated in the branches of the superior mesenteric artery. Streptococci were found in the lesions.

Case II had a history of six weeks' illness, with tonsillitis at the beginning. There was cough with mucous expectoration. Three weeks before admission the patient noticed a swelling in the left groin, which pulsed and was painful. On admission a loud, blowing systolic murmur was made out at

the apex of the heart which could be heard in the axilla and posteriorly. The second pulmonic sound was accentuated. In the left femoral region there was a small oval, elastic swelling. This was painful to the touch, and had expansile pulsation. A loud systolic diastolic humming murmur with systolic accentuation could be heard over the mass. A diagnosis was made of arteriovenous and the patient was operated upon on the day of admission by Dr. Wiener. The external iliac artery was tied in two places and cut between the ligatures with the intention of tying the femoral artery below the sac. Resection of the lower end of the sac was attempted, but it was found necessary to tie the femoral vein and artery. At autopsy the mitral valve was found thickened, and the aortic flaps insufficient. On the under surface of one of the aortic flaps there were very large vegetations. On the center of this flap and on the margins of the other flaps were masses of fine vegetations. There was marked atheroma of the aortic arch. The kidneys showed chronic interstitial nephritis and there was a small aneurism on one of the lesser branches of the renal artery. Intestinal vessels showed no changes. The femoral artery showed marked endarteritis and there was an aneurism at the point where the profunda was given off. The sac contained thrombotic masses, most of which were not decolorized. The remains of the vessel wall were present in the sac. The femoral vein had a small defect in its wall externally and anteriorly which led into the sac. Bacteriological examination showed *Staphylococcus aureus* in the aneurismal sacs of the femoral and renal arteries, while streptococci and *Staphylococcus aureus* were obtained from the heart's blood.

Case III was admitted to the service of Dr. Rudisch with a history of rheumatism in the ankles and knee joints at the ages of nine and fourteen years. The present illness dated back three months. The symptoms first noticed were diarrhea, cramp-like pains in the abdomen, and pain in the ankles and wrists. The patient was weak and had a poor appetite. For four weeks his feet had been swollen whenever he was out of bed, and he had had a cough for four or five days. He had slight fever and sweated a good deal at night. Physical examination showed slight cyanosis with clubbing of the fingers. The apex beat of the heart was palpable in the fourth space 1 cm. outside of the nipple. A short systolic thrill was present at the apex and a short systolic murmur which was transmitted to the anterior axillary line and the pulmonic area. The first heart sound was very sharp and the second pulmonic sound accentuated. The leucocytes were 12,400, hemoglobin, 50 per cent. No changes were noticed about the joints. The temperature, which was 102° F. on admission, ranged from 99° to 101° F. The urine showed a trace of albumin and a few hyaline and granular casts, also a few red and white blood corpuscles. There were a few petechial spots on the conjunctiva, palm of the left hand, and on the cheeks. A diagnosis was made of mitral stenosis and acute endocarditis. The differential blood count showed 76.5 per cent. polynuclears, 22 per cent. lymphocytes, and 1.5 per cent. eosinophile. Treatment was made by injections of collargol. A month after admission an elongated, bulging mass, 1.5 inches long, parallel to the femoral artery and just outside it, was noticed at the junction of the upper and middle third right thigh.

The mass did not pulsate and did not disappear when the artery was occluded. Two days later expansile pulsation and a bruit were made out. A diagnosis was made of a mycotic aneurism. Five days later the mass had increased in size, was distinctly cystic, and appeared to be attached to the femur. Two days later an acute parotitis developed on the left side. Three days later there was an attack of right hemiplegia with absolute aphasia. During the day, however, there was a partial return of speech. Two days later a marked motor aphasia appeared and the diagnosis was made of probable rupture of one of the branches of the left Sylvian artery. An operation was performed by Dr. Lilienthal and an incision was made over the elastic swelling, which was found to consist of a softening laminated blood clot. The lateral aspect of the femur was eroded for a depth of three-eighths of an inch, for about two inches. The walls of the defect were quite rough. Two weeks later there was a hemorrhage from the aneurismal sac which was controlled by packing, but twelve days after this it was found necessary to tie the femoral artery, the bleeding having been found to come from a small rupture in the wall of the artery. Shortly after this there was a rise of temperature with development of a right sided pneumonia, and the patient died on the same day. During the course of the disease four blood cultures were made, which showed the presence of a small number of attenuated streptococci possessed of moderate hemolytic power. At the time of the operation on the thigh, cultures from the clot were made and streptococci found. Postmortem examination showed pneumonic areas in both lower lobes of the lungs. The heart showed hypertrophy of the left ventricle and dilation and hypertrophy of the right ventricle. The mitral valve showed a moderate stenosis. There were bright yellowish green vegetations on the flaps and the surface of the auricle. There were small, yellow infarcted areas in the heart wall, but no emboli were found in the branches of the coronary artery. The spleen, which was enlarged, was deformed by recent and old infarcts of the striking yellow color repeatedly found in splenic and renal infarcts in cases of acute endocarditis, due to attenuated diplococci and streptococci. The kidney showed recent and old infarcts. On the branches of the superior mesenteric artery there were several aneurisms, two about the size of a walnut, the other two about the size of a bean. The liver was very large, congested and fatty. At the hilus there was a large aneurism developed from the right branch of the hepatic artery. Near the surface of the liver were numerous small, irregular yellowish areas. Part of the right femur was removed. It showed marked erosion. The exact origin of the aneurism could not be traced, as the aneurism had been opened up during life and the sac was found almost entirely destroyed by supuration. Bacteriological examination showed the presence of the same attenuated streptococci that had been present during life in all the organs of the body.

Attention was drawn to the following points. In the second case there was an arteriovenous aneurism of the femoral artery, apparently secondary to a tonsillitis. In the third case the rapidity with which the femur was eroded was certainly very striking. In all three of the cases there was present a chronic interstitial nephritis. It was likely that this predisposed to a general infection and made both the

valves and the vessels more liable to attack by the bacteria.¹

Dr. James Ewing, in the discussion, said that he had been greatly impressed by the extent of the aneurisms in these cases. When Dr. Libman had called attention to the fact that the patient in the second case had had an attack of acute tonsillitis six weeks before death, he had received the impression that Dr. Libman intended to connect the tonsillitis with the development of the aneurisms. The examination showed that the heart valves and the aorta exhibited old lesions favorable to the development of aneurisms, so that it would seem difficult to demonstrate that these aneurisms developed as a sort of sequela to the tonsillitis.

Dr. Libman said that prior to the attack of tonsillitis this patient might have had fever. Of this, however, there was no evidence. But he thought it was not at all improbable that there was a connection between the aneurism and the tonsillitis. It is a clinical fact that tonsillitis predisposes to systematic infection with the production of acute endocarditis, acute nephritis and other lesions. It would not take long for thrombotic masses or vegetations to form on valves already the seat of disease and the lodgment of such emboli from such sources in vessels should readily produce mycotic aneurisms. It was remarkable how rapidly such aneurisms could be formed, and how readily they could rupture or invade the surrounding tissues.

Some Observations on the Subway Air.—Dr. E. E. Smith presented some observations on the air in the Subway, which he made in the month of December, at the request of the Health Commissioner. They were few in number, but were systematic and were believed to show some general conditions. The air was taken from the cars of the Subway during operation, and, for comparison, from the Subway stations and from cars of the elevated road, and from the outside atmosphere at a distance of five feet from the level of the street. The temperature and humidity, the amount of oxygen and carbon dioxide, and the number of micro-organisms in the air were studied. The results did not afford any basis for adverse criticisms.

The temperature and humidity did not indicate conditions to cause discomfort. The amount of oxygen of the air was found to be normal. An indication as to whether air is vitiated is found in the amount of carbon dioxide present. Pure air is put at 3 to 4 parts in 10,000. Authorities agree that 7 parts in 10,000 is the upper limit of safety. In this respect the air in the Subway cars is worse than the air in the Elevated cars. Bearing in mind the temporary occupancy of the cars the carbon dioxide did not show an alarming percentage. The air in the empty or partially filled cars was within the safety limits. In regard to the number of micro-organisms found under present conditions, there was one striking fact, namely, the large proportion of molds present. After considering the possible causes, Dr. Smith believed that two might very probably exist: (1) That the atmospheric conditions, the absence of light and the moisture of the

walls, owing to their being recently built, were favorable to the development of molds; (2) that the production of currents of air by the movement of the trains kept the molds in suspension in the air. The constant moving of the air tended to prevent their settling out. The question of the influence of the presence of molds on health was one on which our present knowledge is too meager to permit of definite conclusions.

Dr. James Ewing, in the discussion, said that he was much interested in these figures, which, as he understood them, indicated a very much larger bacterial and mold content in the Subway air than in that of the street. He had not understood exactly how these tests were made on the street, but it seemed at any rate that it would be a dangerous thing to go into the Subway if there were so many more micro-organisms in the Subway than there were in the street. Some years ago he had made some tests on the bacterial condition of the air of the streets for Dr. Woodbury. They were intended to determine how many bacteria would fall on Petri dishes exposed in various places. There was an enormous difference in the number of bacteria in the air of different streets and in different states of weather. It seemed to him that unless these experiments were very carefully controlled as to temperature, air currents, etc., they were unfair as a comparison between the air of the street and that of the Subway.

Dr. Smith said that Dr. Ewing's remark especially applied to observations made with Petri dishes and not to the same extent to air examined by passing through the aerobioscope where the surface was not exposed in that way. The air had been taken at five feet above the surface of the street, and it was taken in a spot where it was guarded from wind. On one or two occasions there was snow on the ground, so that there could have been but very little dust. The temperature in the street was from 25° to 35° F. Dr. Smith did not think that the figures given were in any way alarming. They were no greater than were found in crowded rooms in our own houses. Personally he believed it quite possible that the growth of the molds was very largely due to the damp condition of the Subway when it was first opened. He would not be at all surprised if later observations should show that the growth of the molds had become very much less.

Report on Some Observations on Fatty Extracts From Organs.—Dr. E. K. Dunham reported some observations on fatty extracts from organs. He had been working on the extracts, from kidneys especially, for a year or two, his attention having been called to the subject by a question which came into his mind as to whether the fatty changes which are so familiar were really due altogether to the presence of neutral fat. He had speedily come to the conclusion that what was usually regarded as fat was really not only neutral fats, but contained, in addition to this, a very considerable amount of other fat-like substances, among them lecithin and protagon. Quantitative analyses of these substances had been made with some degree of success, and it had been found that in fatty extracts from the kidney the amount of lecithin ranged from about 30 to 67 per cent. of the extract; showing that there might be as much or more lecithin or phosphorylated fat as neutral fat in these organs. His reasons for using the kidney were, in the first place,

1. Holst. Norsk Magazin for Laegevidenskaben, No. 4, 1901. Reviewed in Deut. med. Woch., Literatur-Beilage, 1901, p. 107. Simmonds. Deut. med. Woch., p. 353. Ling. Reviewed in Lancet, June 29, 1901, p. 1846. Duckworth. Medical Press and Circular, June 12, 1901. Canon. Mitteilungen aus den Grenzgebieten, vol. 2, p. 419. Gabriel. Wien. klin. Woch., 1901, p. 1051. Huchard und Bergougnian. Journal des praticiens, Jan. 1, 1902. Galayardin. Cent. f. innere Medizin, 1902, p. 293. Brion. Deut. Aerzte-Zeitung, 1901, Nr. 18.

because the kidney was easily freed from obvious fat; secondly, because it hardly seemed probable that the kidney could be regarded as in any sense a normal fat depot. This was certainly not true of the liver. The results of examination of the liver varied somewhat from those of the kidney. One or two other organs had been examined in a less thorough way. The fact that these phosphorized fats were so uniformly present in the cells and were really so abundant, making up something like 6 to 8 per cent., in one case 10 per cent., of the total solids of the organ, suggested that they were very important cell constituents, and furthermore suggested that possibly some of the fat found in the different forms of degeneration might be in part lecithin or phosphorized fat, in part, a neutral fat derived from the fatty acids they contained, since the fatty acids might be split off from these phosphorized fats. It was interesting in this connection to recall some observations made by Albrecht, published in the Transactions of the German Pathological Society, in which he calls attention to the fact that there are certain minute structures in cells which are double refracting. These are double refracting substances. Albrecht called attention to the fact that these fine granules ("liposomes") occur in the heart in a series of rows lying between the longitudinal striations of the muscle fibers, and also to the fact that the fatty granules first appear in this situation in fatty changes in the heart. He is inclined to think that substances like protagonists may become modified in such a way as to give rise to these fat droplets. There was one very extraordinary physical quality of these phosphorized fats, and that was their power of taking up water and producing myelin forms so that a mere trace of lecithin put on a slide and moistened would make a hundred-fold its bulk of myelin figures. It seemed to absorb water and swell up with interesting and curious motions, growing so fast that one could watch its development. It had been suggested that these phosphorized fats and lecithin-like bodies or lecithins might be a very important constituent in cytoplasm in causing the other constituents to assume and maintain the form of an emulsion in which the bodies in solution are separated into droplets by a film of myelin substance very sensitive to variations in the amount of moisture. Perhaps the changes which are known as parenchymatous or fatty degenerative changes, might have to do with modifications in this emulsion in which these myelin films may form essential parts. Possibly in the minor degrees of these changes we may have more imbibition of water through osmotic pressure. In the more chronic fatty changes it is possible that we have a chemical change in the myelin substance. It was pretty certain that a complicated molecule like these lecithins, present in the cell in such abundance, must be of deep significance. So far as microchemical staining reactions go, the lecithins will take up those we are accustomed to use for neutral fats. It is more possible to make a distinction by means of polarized light. Many of these substances are double refracting, but it is exceedingly difficult to make very accurate observations respecting double refraction on minute fatty granules.

A Note on a Peculiar Action of a Streptococcus on Blood Plates.—It has been repeatedly noted by Dr. E. Libman in studying the growth of streptococci on plates of blood-agar that the streptococci vary as to their influence on the surrounding medium. Some will cause a disappearance of the blood

in a larger or smaller area about the colony and some will not have any effect of this kind. Some authors are of the opinion that the hemolytic effect, so-called, varies in accordance with the virulence of the organism. This we have not found to hold. The streptococcus on the plates which Dr. Libman showed was isolated by Dr. Bauman from the blood of a case of phlebitis and periphlebitis of the leg. On the blood-agar plates it was noticed that after twenty-four hours the organism was surrounded by a clear area. Surrounding this clear area the blood on the plate was darker in color than on the rest of the plate. After forty-eight hours a second clear ring appeared outside of this area of darkened blood. In one observation the process extended so that there were three clear concentric rings about the streptococcus colony. It was very difficult to explain how the organism could produce a result like this.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, held March 13, 1905.

The President, Thos. E. Satterthwaite, M.D., in the Chair.

The Constitutional Treatment of Bright's Disease.

—Dr. W. H. Porter read a paper on this subject. (To appear in a subsequent issue of the MEDICAL NEWS.)

Recent Advances.—Dr. R. W. Wilcox said he entirely agreed with Dr. Porter as to the fact, now clearly established, that in chronic interstitial nephritis the condition is not limited to the kidneys, but is widespread; implicating the arteries especially and extending to every tissue of the body. One of the points of importance which had recently been brought out was the impermeability of the kidney to sodium chloride. This found expression in the amount of anasarca present, and by regulating the amount of sodium chloride ingested, good results could sometimes be obtained. By the daily weighing of the patient the quantity of sodium chloride it was necessary to take out of the food could be ascertained. Another point was that the diminution of the fluid ingested had often been found to be accompanied by an increased amount of dropsy. Dr. Wilcox gave a note of warning against the use of so-called diuretics. Even the drugs that were supposed to be least irritating might be followed by serious injury. In chronic interstitial nephritis (the arterial type) he said it was possible to make a diagnosis by means of the sphygmograph before there was any evidence presented by the urine, and long before the development of any changes in the eye.

The Advantages of Erythrol Tetranitrate.—Dr. Porter had spoken of the utility of nitroglycerin in this affection. He himself believed that much better results could be obtained with erythrol tetranitrate, which is official in the British Pharmacopœia. By means of this drug the characteristic effects of the nitrites were produced more slowly and gradually, and lasted for a much longer time.

Lumbar Puncture and High Intestinal Irrigation.—In the persistent headache not infrequently met with, and also in preventing coma and convulsions, good results were now often secured by the use of lumbar puncture. This measure was purely symptomatic, however, and had no curative agency. If he were to mention any one thing that was of special value it would be the systematic use of high intestinal irrigation, as practised by Kemp. By means of it he had seen comatose patients snatched from the very jaws of death, and afterwards restored to a moderate degree of usefulness.

Lavage of the Renal Pelvis in the Treatment of Bright's Disease.—This was the title of the second paper, by Dr. Winfield Ayres (published in the *MEDICAL NEWS*, July 1, 1905, p. 7).

The Treatment of Pyelitis.—Dr. H. A. Kelly, of Baltimore, read the last paper of the evening, on this subject. He said that pyelitis might be of all grades of severity, and he desired to call attention to the great importance of appropriate treatment in the milder forms with a view to the prevention of the very grave consequences liable to result from the neglect of these. The advanced grades, such as pyelonephrosis and pyelonephritis, were everywhere recognized as surgical conditions, but if the attention of the profession could be directed to the early stages of pyelitis, it would be found that these cases were amenable to simple treatment. Nature's methods of cure were always suggestive, and what nature suggested here was irrigation. One plan of treatment was the expectant; keeping the patient in bed and giving plenty of water. Urotropin was about the best drug that could be used in these cases. Another method was to employ irrigation by means of ureteral catheters, and very small catheters would usually answer for this purpose. Strictures of the ureter were sometimes met with. In one instance that he had seen the stricture was in the vesical mucosa, and this he had been able to completely do away with by snipping with scissors. When the stricture was more deeply seated, catheters of various sizes were required, and sometimes metallic instruments were called for. Stone in the kidney was sometimes met with. Another class of cases was that associated with a low grade of hydro-nephrosis. Dr. Kelly expressed the opinion that a good many appendices and a good many ovaries and tubes had been removed from patients in whom this was the real source of trouble. He narrated a case in which there had been persistent localized pain for a long time, and when he slowly injected fluid into the kidney on the side affected the patient was able by her sensations to locate at once the seat of the pain. This case promptly yielded to treatment. In one case of pyelitis affecting both sides he found it necessary to amputate both ureters and make an anastomosis with the bladder. The point that he desired to make was that while the severe grades of pyelitis called for radical surgical procedures, the milder ones might be successfully treated by catheterization and irrigation, with urotropin internally.

Dr. Ayres' Statements Corroborated.—Dr. F. M. Johnson, of Boston, said that from an experience of a considerable number of cases he could confirm the statements made by Dr. Ayres. These were private cases which had been referred to him after treatment of all kinds, with very little benefit. He had added the lavage, at the same time maintaining other treatment, and marked improvement had often resulted. It was astonishing, he thought, how little lavage, even of the bladder, was made use of by the profession. Lavage of the kidney was no more dangerous than that of the bladder if it were performed skillfully and under proper precautions. Our knowledge was constantly being increased by contributions in one direction or another, and lavage of the renal pelvis seemed to him, to be a measure worthy of careful consideration.

The Test of Time Required.—Dr. G. M. Edebohl said that in the present state of the treatment of Bright's disease any addition to our resources would be most welcome. At this time, however, it was absolutely impossible to arrive at any positive conclusions as to the value of Dr. Ayres' procedure. Only nine or ten months had elapsed since he had made it known, and

it was essential that it should be tested by the observations of several years. He could not agree with Dr. Ayres that a diagnosis of incipient Bright's disease might be made on the presence of a little albumin and a few granular and hyaline casts in the urine. All these signs were sometimes to be found with a movable kidney, and might entirely disappear after fixation of the organ.

Pain in Hydronephrosis.—He agreed with Dr. Kelly in regard to the pain met with in hydronephrosis, and felt sure that ovaries and tubes, and even the uterus itself, had sometimes been taken out when the real trouble was in the kidney. It might be that it was movable kidney in some instances which caused the slight hydronephrosis spoken of by Dr. Kelly.

Ureteral Catheterization a Difficult Procedure.—He did not think it would be right to resort indiscriminately to catheterization of the ureters, as this required special skill. There were fewer men able to do this, he believed, than to perform a major operation on the kidney. With these limitations he desired to endorse the papers of the evening.

The Curative Effect of Lavage Hard to Understand.—Dr. Willy Meyer said that Dr. Kelly had an advantage over the general surgeon in the fact that all his patients were women, as ureteral catheterization was a much simpler matter in the female than in the male. As to Dr. Ayres' treatment of Bright's disease, he thought it difficult to understand how lavage of the renal pelvis twice a week could exert any positive influence on the entire parenchyma of the kidney, considering the comparatively large size of the organ.

The Treatment Does Not Seem Philosophical.—Dr. F. Bierhoff said that he had to confess that the more he had seen of ureteral catheterization the more had he become convinced that the best treatment for pyelitis is rest in bed. Only in the severe cases did he think this procedure should be resorted to. As to the treatment of Bright's disease by lavage, this did not seem to him at all philosophical. The fluid injected was confined entirely to the pelvis and calices, while in this affection we had a process which had its origin in the remote tissues of the kidney; and he failed to see how the Malpighian bodies could be affected in the slightest degree by such treatment. In order to take the place of any accepted method of treatment a proposed method must accomplish at least as much, if not more than the other; this had not been demonstrated here. Dr. Ayres had stated that the albumin and casts diminished, but this result could be secured by simple rest in bed and in various other ways. He did not think, therefore, that he (Dr. Ayres) was justified in making any claim, since the same results could be obtained by much simpler methods. The only surgical treatment of Bright's disease which had as yet proved of real value was Dr. Edebohl's renal decapsulation. If this disease ordinarily originated from an extension of inflammation from the renal pelvis, lavage might seem to be indicated, but the whole trend of authoritative opinion was just the reverse of this, recognizing that the process originated in the remote tissues of the kidney.

The New Theory Untenable.—Dr. A. Lapowski said that Dr. Ayres had invented a new theory, and it was not tenable. He had based the supposed efficacy of lavage on the benefit derived from washing out the renal pelvis. But it was not possible to thus wash away gonorrheal infection. The gonococcus would stick, no matter how thoroughly the lavage was carried out, and it could be removed only by means of a curette. He also thought Dr. Ayres' method attended

with considerable danger, as the parts were not in the same condition as in the normal kidney.

The Term Bright's Disease Should be Abandoned.—Dr. A. A. Berg thought the time had come when the term Bright's disease should be given up. The cases should be designated as chronic nephritis. It was very difficult, he said, to understand how lavage of the renal pelvis could have any effect on such a condition. If we really had an inflammation ascending from the bladder, accompanied by obstruction, the condition might no doubt be benefited by the use of lavage, but this was not the usual history in chronic nephritis.

Dr. Ayres, in closing the discussion, said that in his cases it was a fact that, notwithstanding various other measures employed to prevent the occurrence of casts and albumin in the urine, they continued to develop; and that under the use of lavage they progressively diminished. He had been very careful to state that lavage was applicable only in selected cases, and he had claimed for it only such results as, within the limitations he had specified, actual experience had shown to be fairly attributable to its effects. In interstitial nephritis no benefit was derived from lavage, except at the very beginning of the process. He was sorry that Dr. Johnson had not given more details of his cases, as he had had the same experience in Bright's disease that he himself had met.

TENNESSEE STATE MEDICAL ASSOCIATION.

Seventy-second Annual Session, held at Nashville, April 11, 12 and 13, 1905.

The Association met at Watkins' Hall, under the presidency of Dr. Paul F. Eve, of Nashville.

Prayer was offered by Rev. W. M. Anderson. Addresses of welcome were delivered on behalf of the city by Mayor A. S. Williams, and on behalf of the medical profession of Nashville by Dr. Geo. H. Price, the response to which was made by Dr. H. Berlin, of Chattanooga.

Melancholia.—Dr. S. T. Rucker, of Memphis, read a paper on this subject. He defined the disease, and then referred to the etiology, symptoms, varieties, pathology, diagnosis, prognosis, and treatment. Heredity was encountered in about 50 per cent. of the cases. Ill health, mental strain, worry over financial affairs, domestic troubles, and disappointment in love were also factors largely responsible for most cases of melancholia. Auto-infection undoubtedly played a considerable rôle in some cases. Pregnancy, especially in primiparae, was an aggravating cause, and generally began about the third or fourth month. The puerperal state did not so often produce melancholia as pregnancy and lactation. Severe forms of agitated melancholia were occasionally associated with chronic alcoholism. The sobering-up after a prolonged spree or debauch would precipitate an acute attack of melancholia, not infrequently ending in suicide. The onset of melancholia was almost always gradual. At first it might be only a feeling, which took no definite shape, and there might be no delusions. Every thought and everything in the environment had a sorrowful color. When questioned, the patient would simply say he felt depressed, or he had the blues. The morbid feeling constituted the disorder. The symptoms varied from a simple state of dejection to a state of profound depression, in which the patient was either paralyzed by the dreadful nature of his concepts, or was thrown into a state of agitated suffering, associated with marked pre-

cordial distress and peculiar pains in the back or top of the head. The author mentioned three varieties of melancholia, the acute, subacute, and chronic. There was no known pathological anatomy for melancholia. It was considered a functional disease of the brain. Melancholia could hardly be mistaken for acute mania, as in melancholia there was a slowing of the thought process; while in acute mania there was an accelerated flow of ideas, and the mania was unusually cheerful and talkative. The prognosis in melancholia was very favorable. Fully 90 per cent. recovered. Thorough investigation, speedy separation from relatives and friends, and an early commitment to an institution for treatment should be the rule in this class of patients.

Dr. M. Campbell, of Knoxville, said that melancholia agitata and simple melancholia were symptoms of but one and the same disease. Melancholia itself was not, strictly speaking, a mental disease, but a symptom of a pathological state that underlay the symptom of depression that was most prominent, whether it be an organic or functional disease, but most generally it was functional. A large percentage of the cases of melancholia that were sent to hospitals for the insane did not recover. He did not think half of them got well. As to the treatment, he suggested a change of scene, getting away from the conditions that produced the disease, building up the patient physically, giving hypnotics to produce sleep, warm baths, etc.

Dr. W. J. Breeding, of Taylor's, related the history of a woman, forty-two years of age, mother of eight children. In the family history there was insanity in an aunt. He was called to see her in a former pregnancy, when she was very hysterical, and was troubled with nausea and vomiting. He saw her in the sixth week of pregnancy, when she was in a very depressed condition. He made a diagnosis of hysteria. The woman recalled her experience in a former pregnancy, and said she could not live through this one, believing she would have a repetition of nausea and vomiting. There was no pathological condition, so far as could be determined. She had numerous delusions up to the seventh month of pregnancy, when a miscarriage occurred, the fetus being badly deformed. It was thought she would now get well, but in a couple of weeks she lapsed into a condition of melancholia, eked out a miserable existence for two or three months, and then committed suicide by hanging.

Dr. C. P. McNabb, of Knoxville, mentioned two cases, in neither of which would the family consent to sending the patient to a hospital. One patient had three attacks of melancholia, with three partial recoveries. The other was now in her third attack.

Dr. A. F. Paschall, of Crossland, thought that in the case of young men advertising literature played an important rôle in the cause of melancholia.

Dr. S. S. Crockett, of Nashville, said there was a popular impression that there was an insanity that developed in puerperal women that differed from other forms of the disease. There never was a greater mistake. Pregnancy and lactation should be regarded as one factor that might produce insanity in a woman who was otherwise predisposed to it.

Dr. Louis Leroy, of Nashville, agreed with Dr. Crockett, that there was no special type of insanity peculiar to the pregnant woman. The condition had been recognized as an etiological factor, possibly

as the exciting cause of the disease, to such an extent that even though incorrect from the standpoint of pathology, clinically the term puerperal insanity was recognized both professionally and by the laity. The probability was that the causes were few in number: First, that the shock to the nervous system resulting from the profound changes occurring in pregnancy might bring on an attack which was impending, or accentuate the nervous disturbance, otherwise held under control. On the other hand, many cases were the result of auto-intoxication.

Dr. S. T. Rucker, in closing, said that melancholia recurred in some instances; but when the patients were carefully treated, recurrence would seldom take place.

Diagnosis of Kidney Diseases.—Dr. Louis Leroy, of Nashville, read a paper with this title, and, among others things, said that in renal diseases possibly more than in some other classes of ailments accurate discrimination in diagnosis was important with reference to the prognosis as well as treatment. It was a matter of some interest to a patient as to just what his life expectancy was, and how long a period he might expect to devote to settling estates or arranging business matters. The physician should exercise care and judgment in his diagnosis, as a failure to distinguish between the parenchymatous or interstitial nephritis, or to at once make a snap diagnosis of nephritis from a trace of albumin without further investigation of general clinical conditions and the exclusion of some other lesion microscopically, or a repeated examination, in the absence of casts, microscopically, to determine some cyclic or functional albuminuria, might render him with some justice a subject of ridicule, for which years of careful and conscientious work could scarcely atone. While malformation of the kidneys were of great rarity, their importance in surgical cases should cause the possibility to be constantly borne in mind. The absence of one kidney or fusion of both into one mass should be considered, and the presence of an organ on both sides determined, if possible, while debating the admissibility of operative measures. It was not always possible, and frequently quite difficult, to determine the presence of the kidney when in normal position, either by percussion or palpation, especially in patients with thick abdominal walls, or large, well-developed spinal muscles. In such cases the presence of the organ might be determined by the X-rays, or both ureteral orifices might be determined by a cystoscopic examination, in which case the presence of two kidneys might be considered as assured, the possibility of a single kidney having two pelves and ureters being so extremely slight as to be negligible. In case of movable kidney, however, it was usually possible to recognize the condition by palpation, sometimes assisted by percussion, and one might sometimes be surprised to find no clinical symptoms associated. With some cases, the kidney readily returned to its normal position, where it remained for some time, and it might be necessary to make several examinations at different times before finding it when displaced. In appendicitis the location of the point of tenderness, the usually higher temperature, absence of blood in the urine, tenseness of the muscles of the abdomen and flank, and the increase of polymorphonuclear leucocytes in the blood should direct attention from the kidney, especially if the mass could be palpated. Movable kidney in all its bearings was considered at length. Neuralgias were

usually found in patients of a more or less neurotic temperament, and would not be found to be associated with hematuria. Ovarian inflammation might be puzzling, but one would usually be able to elicit some exciting cause, and local tenderness should be easily recognized by vaginal examination. Hematuria was absent and some endometritis was frequently associated. Diaphragmatic pleurisy would usually be influenced somewhat by respiration, even though the diaphragm be held rigid. There would be absence of abdominal breathing, and cough was usually present. The respirations were usually shallow and hurried, and early in the attack auscultation would frequently elicit the friction sounds. The essayist described the points of differentiation of kidney diseases from gastric ulcer, ataxia, chronic valvular diseases of the heart, and then referred at length to acute parenchymatous nephritis and acute interstitial nephritis. Pyelonephritis was usually secondary to some other infection below, but especially in typhoid or tuberculous infections might originate through the blood.

Perinephritic Abscess.—Dr. W. A. Bryan, of Nashville, discussed this subject, and the differentiation of this form of abscess from other abdominal conditions. He reported the following case: Mr. F., locomotive fireman, aged twenty-eight years, had no evidence of disease since childhood. In August, 1904, he got a superficial burn on his left olecranon, which became infected, but healed kindly. After a few days an abscess developed near the burn. This was opened and healed. A few weeks later three or four other abscesses formed around the site of the original abscess, were opened, or ruptured, and healed. In October he began to have pains in the lumbar region on the right side, and soon afterwards quit work and took to his bed. Pain in the right side was described as a "catch," and in his back there was constant aching. He became distinctly septic. Liver dulness was elevated one inch in the right nipple line; right side one and one-half inches larger than the left. Enlargement of the right loin was very perceptible, and fluctuation was present; pus on aspiration, and urine normal. December 15, 1904, the speaker operated, removing twenty-four ounces of pus. Patient improved, but had pain again from the beginning after the operation in his left side. It was aspirated, pus was found, and two weeks from the first operation a second one was performed, removing eight ounces of pus from the left side, after which patient made an uninterrupted recovery, and has since gained forty pounds. The pus gave a pure culture of *Staphylococcus aureus*. There was no connection between the two abscesses. He learned from the patient at the second operation that another surgeon had aspirated both sides and found pus before he saw patient.

Treatment of Hypertrophied Tonsils.—Dr. J. F. Hill, of Memphis, entered his protest against the promiscuous and wholesale excision of children's tonsils. There were three kinds of diseased tonsils: (1) A tonsil which was constantly swollen, red and easily irritated; this tonsil was of a specific scrofulous, or tuberculous nature, and the only logical method of dealing with it was by excision. (2) A tonsil which was diseased in the interior, which formed occasionally into an acute abscess. (3) A tonsil with ulcers on the surface, which might be either indolent or active, and were easily managed by a two per cent. solution of nitrate of silver. As to treatment, tonsil No. 1 was treated by complete ex-

cision. Tonsil No. 2, which was diseased internally, had openings leading from the surface to the interior, and at the bottom of these openings there was a quantity of fungous tissue, with the formation of acute abscesses. The openings to the tonsils, as the crater was to the volcano, allowed the escape of diseased mucus from the interior of the tonsil. When these openings were closed from cold, or otherwise, the mucus was retained and decomposition set up; hence an abscess. Tonsil No. 3, which had ulcers on the surface, could be relieved with 2 per cent. solution of nitrate of silver, but tonsil No. 2 gave considerably more trouble. His method of treating tonsils of this character was to pass a small curette through these openings into the bottom of the tonsil and remove all the diseased or granular tissue, then carry a 10 per cent. solution of nitrate of silver into the tonsil. This should be repeated in from three to six days, and continued until the tonsils were cured, which usually required six treatments. By this method the tonsils were cured and left to perform their natural functions. He laid down two general rules: (1) Cure all tonsils which could be cured, and leave them intact. (2) Excise all tonsils which could not be cured.

Treatment of Hypertrophied Tonsils.—Dr. J. T. Herron, of Jackson, in a paper on this subject, quoted from some of the best authorities, to show the importance of removing hypertrophied tonsils by some operation, and not allow them to remain, thus weakening the mental and physical strength of boys and girls. He detailed a number of cases upon which he had operated with gratifying results. Advice properly given would do much to dispel from the minds of the laity the old idea that hypertrophied tonsils must not be removed.

Dr. G. C. Savage, of Nashville, said it was a great mistake to allow children to go on from year to year with enlarged faucial tonsils, especially if they were subject to repeated attacks of inflammation. There was no harm from clipping a tonsil unless the child should happen to bleed to death when the operation was done. This rarely occurred. A tenotome, shaped after the manner of the tonsillotome, was just as easy to use on the pharyngeal tonsil as the tonsillotome on the faucial tonsil.

Dr. T. J. Happel, of Trenton, preferred Tiemann's tonsillotome for removing tonsils. He had tried the scissors and other instruments, but said the practitioner should select that instrument which was best adapted to his use, then the work could be done more successfully.

Medical Ethics.—Dr. T. J. Happel, of Trenton, read a paper on this subject. He said it was to be regretted that most graduates left medical colleges with a vague sort of idea that there used to be in the dim past a set of rules governing the relations of medical men to one another, to their patients, and to the public at large, but that since nothing had ever been said to them by their professors upon this subject, those rules had long since passed into innocuous desuetude. In many instances they soon became imbued with the idea set forth by a certain lecturer of the importance of "getting there," and that they laid down for their own guidance "get there" in any way one could, provided he did not violate the eleventh commandment. They followed their own golden rule as written and interpreted in these days of greed for gain—do unto the other fellow as you would expect him to do unto you if he could, and do it first.

Origin and Treatment of Malignant Growths.—This was the title of the President's address, delivered by Dr. Paul F. Eve, of Nashville. He mentioned

two varieties, one of the epithelial type of cells known as carcinoma; the other of the endothelial variety, or connective tissue cells, known as sarcoma. Both of these in many respects presented clinical features very much alike. He referred to the theory that cancer is due to parasitic origin, but said he was very much more favorably impressed by the other theory, which bases the origin of cancers upon cell proliferation. Assuming that this disease was due to cell proliferation, if one could in any way check or change these cells, he had the promise of an ultimate success and recovery. About two years ago he operated upon a lady for scirrhus mamma, with involvement of the neighboring glands. A very complete operation was made, and every vestige of the disease removed, so far as could be discovered. Her recovery seemed complete in every respect, and he flattered himself that there would be no recurrence. Four months after the operation she returned with a reappearance in the scar tissue. A second operation was performed, consisting of curetting the diseased structures. The patient was subjected to treatment with the X-ray for four weeks. At first improvement was noticed, but at the end of the third week the wound looked very unhealthy, and at the end of another week the patient returned to him, appealing, as all those unfortunate cases do, for some means to save her life. The appearance of the ulceration was foul and fungous, and every indication pointed to general infection and a speedy death. He began to treat this wound with balsam of Peru, after first irrigating with bichloride of mercury, 1-3,000. After the first few days the unpleasant odor ceased, and he was surprised to notice a decided change and granulations of a healing nature springing up in the wound. This treatment continued for five weeks, with an occasional touching up of the granulations with the solid stick of nitrate of silver. At the end of this time the wound was entirely healed, and the patient looked the picture of health. He had the pleasure of seeing this patient a short time ago. There was not the slightest evidence of any recurrence, and the woman was in excellent health. Since this case he had had quite a number of other cases, which had been treated in a similar manner. Improvement had been marked in every instance, and the ulcerations from the foul and fungous condition had assumed healthy granulations, healing occurring slowly, but effectually. He cited two more cases.

Gastric Dilatation Without Stenosis.—Dr. Fenton B. Turck, of Chicago, discussed the pathology of this subject. He cited the class of cases usually observed, and advanced the statement that many severe diseases may go on indefinitely without symptoms and without serious consequences, but as soon as there was gastric atony and dilatation, the medical adviser was called in for the relief of pressing symptoms. In childhood the dilatation was, usually acute, due oftentimes to indiscretions in diet, but the stomach proved its own best relief by ejecting the cause of the trouble, giving itself the only remedy required—rest. In these cases the symptoms were mostly confined to vomiting, and rarely proved troublesome, yielding readily to treatment by rest. In adults the severest lesions might have been present for indefinite periods of time—gastroptosis from various causes; gastritis, either acute or chronic, including atrophy, and yet the symptoms be wholly absent. But when gastric atony with dilatation supervened, there were at once symptoms of a most positive character; and many diseases that progressed to a

fatal ending without recognition were on post-mortem examination discovered to be gastric atony with dilatation, the fundus of the stomach often resting on the pelvic apparatus. He drew a picture of the mechanical movements of the stomach and of the physiology of its action, the non-activity of the cardia in the process of digestion, excepting for the chemical action that took place there, and the expulsive movements of the pyloric portion in rhythmic waves. At this point he outlined a number of experiments to show that it was not due to any stimulation of the stomach contents that caused the muscularis of the stomach to begin activity. In the laboratory he had introduced into the stomach of dogs hydrochloric acid, the starches, peptones, albumoses, and the like, none of which had the slightest effect in causing muscular contractions of the stomach. He had, after all chemical and physiological means of stimulation had failed, introduced water in varying quantities, and air—immediately upon which the stomach action began—deciding, according to his view, that stomach muscle movement was wholly due to distention. Taking up the question of the actual conditions present in stomach fatigue, Dr. Turck cited the findings of Helmholtz and others, who had determined the purely chemical nature of the state, and of Mosso, who, upon injecting the blood of a fatigued animal into the circulation of one not under fatigue, had brought about a precisely similar state. These facts had led unavoidably to the conclusion that some changes had taken place in the blood itself; that there had been formed in the process of metabolism certain products which, for want of a better name, must be known as toxins, and that these toxins were capable of vast reproduction, if not interfered with, or unless antipointed. Dr. Turck had made exhaustive experiments along the same line in the laboratory, using dogs, rabbits, guinea-pigs, and horses. He had been able to inject the toxins of fatigue into the circulation from one animal into another, and had been able to accomplish fatigue even to the point of death. The profundity of the infection depended upon the completeness of the fatigue in the animal previously prepared and the amount of the toxins injected. But he had decided, and his experiments were bearing fruit, that if metabolism created products which were toxins, and that the stomach muscles which had created these toxins were capable of renewing their function after a period of rest, then it was inevitable that these toxins had their antibodies in the circulation; that when the state of fatigue had commanded the muscle to rest, that is, to cease creating these toxins, then it became a matter of time when the antibodies in the circulation would be in the majority, and by their presence restore the muscle to its former state. He deduced from these experiments, as well as from the nature and course of fatigue in the stomach, that rest was the means at hand for the cure of the condition. In dietetics no fast and hard rule could be laid down, the prime requisite being to give the greatest possible amount of rest, the shortest possible period of muscular activity, and the most serviceable foods to maintain the strength of the patient. He preferred two meals daily at the outset of treatment, one in the morning and one in the evening. Theoretically, a liquid diet was preferable, but practically he employed solid food in a finely divided state, properly prepared, with a sufficient amount of liquid to aid the stomach in the maceration of the mass, and to the end that it

might be easily propelled into the intestines. If 3,000 calories were required of a mixed diet under normal conditions, it would be well to cut this down to 1,000, or even less, at the outset. For example, 100 grams breast of chicken, finely divided; 100 grams mashed potatoes, 100 grams toasted bread, 30 grams of butter, 300 c.c. hot, rich milk, which was first coagulated with rennet, in order that it might not be coagulated in the stomach, then shaken back to liquid and heated. Meat, macerated in water, then pressed for its extracts, crushed crackers, hard boiled eggs, and a bit of bran or ballast was another favorite form of diet for a change. If there was persistent anorexia the patient would lie on the right side for two hours following the meal. In connection with the diet, certain mechanical methods were employed, most of which he had found to be fruitful of harm rather than good in these cases. Lavage, galvanic and faradic electricity, exercise, and the more or less systematic bathings and drugs were some of the means which Dr. Turck failed to appreciate. The high frequency current with Oudin resonator he had found sometimes of advantage as an adjuvant.

Food Adulteration in Tennessee.—Mr. Lucius Brown, chemist, of Nashville, in a paper on this subject, said that milk was peculiarly liable to sophistication on account of its perishable nature and the readiness with which it could be adulterated. This took the form of watering, thereby reducing the quality, and the addition of preservatives to conceal or prevent decay. There was no form of food adulteration which was meaner than this. Milk was the standard food of young children, and was largely used for invalids, and the addition to it of such materials, which had a directly injurious effect on the digestion, and usually only took down the danger signal without removing the danger, should be relentlessly and severely punished. An examination of pure food legislation showed that twenty-two States had a regularly organized food inspection department. It was significant that Kentucky had just increased its appropriation for this purpose from \$7,500 to \$10,500. For the proper enforcement of pure food laws a qualified analytical chemist was an absolute necessity. Not less necessary was a wise and active pure food commissioner. There need be, on the part of the retailer, no fear of a hardship being worked on him by a proper enforcement of food legislation. He was always given an opportunity to put himself right, if he desired to do so, under any food laws. But in order to reassure him most States allow the retailer to be exempt from conviction if he produced a written guarantee from the wholesaler or his agent resident within the State.

Early Diagnosis and Early Treatment of Otitis Media.—Dr. N. C. Steele, of Chattanooga, said that careful observers knew there was a large number of adults who were permanently deaf in one or both ears. Of every one thousand seriously deaf ears, perhaps in 999 the disease was otitis media, and every aurist knew that chronic otitis media was generally incurable. He pointed out the general management and treatment of these cases, and closed by saying that the physician who looked carefully and intelligently after the patient's general health, as well as the local treatment, would have the greatest success in otitis media, just as he would in other local diseases.

Tuberculosis Cutis.—Dr. J. M. King, of Nashville, discussed this subject. He pointed out how the

initial skin lesion was formed, and discussed the differentiation of lupus from rosacea, eczema, and blastomycosis, which he said was rarely necessary. Radiotherapy, Finsen light, and violet rays were at present considered the most acceptable method of treatment, and should always be used if the patient was in reach of it. The X-rays and Finsen light were both satisfactory, but the ideal treatment was the combined use of X-rays and Finsen light.

Gastro-Intestinal Diseases of Children in Summer.

—Dr. Zeb. L. Shipley, of Cookeville, divided the acute diarrheas of infancy on the basis of their etiology into two main classes, namely, those due to nervous origin, and those due to infection. Simple diarrhea was of nervous origin, manifested by an increased peristalsis. This increased peristalsis might be caused by various conditions acting through the central nervous system, or by the mechanical action of undigested food. Among the most important factors acting through the central nervous system were sudden changes in temperature, prolonged exposure to heat or cold, fright and fatigue. Food might fail of digestion from being unsuitable, or from the digestive organs being functionally weak. In either case the food became a foreign body. In this form of diarrhea the intestinal mucous membrane showed no pathological lesion, unless it be a slight hyperemia. The stools were increased in number and fluidity, and usually contained particles of undigested food. The chief factor in the treatment of this form of diarrhea was the removal of the cause. If the alimentary canal contained undigested food, this could best be eliminated by giving fractional doses of calomel and sodium bicarbonate, often repeated, until one or two grains had been given, or castor oil given in teaspoonful doses acted admirably. The cause having been removed, the diarrhea usually ceased. But should it continue, the treatment should be directed to the control of the excessive peristalsis. The author next devoted considerable attention to infective diarrhea, and said in the prophylactic treatment of it the infant should have the best possible hygienic surroundings, be given plenty of fresh air, and bathed frequently. Care should be taken not to overfeed the infant, as less food was needed in warm weather than in cool, and owing to the depression produced by the heat the child was less likely to digest its food. The infant should be lightly clothed, and kept as quiet as possible.

How Shall We Feed and Treat the Baby?—Dr. Herman Hawkins, of Jackson, in a paper with this title, laid down three cardinal rules: (1) A food should be given the baby which could be assimilated and given at regular intervals. (2) One should obtain the best possible hygiene of person and surroundings. (3) As little medicine as possible should be given. Each rule was discussed at considerable length, and several cases were reported.

Amyloid Degeneration.—Dr. C. P. McNabb, of Knoxville, defined this disease, and then discussed its etiology, pathological anatomy, symptoms, diagnosis, differential diagnosis and treatment. Treatment consisted of removal of the cause. If syphilis or chronic malarial cachexia was present, the patient should receive proper medication. If there was a chronic suppuration, the surgeon should be called early, and pus evacuated. The physician should be very watchful in cases of hip joint disease, old pyosalpinx, and ileorectal abscesses.

The More Serious Complications of Grippe.—Dr. E. A. Cobleigh, of Chattanooga, said that one of the

primal results of influenza which was impressed upon him early was not simply the usual debility which accompanied most of the cases, and seemed out of all reasonable proportion to the appreciable conditions presented, but its indefinite persistence and extreme degree in quite a good many cases. These patients, wholly without regard to age or previous vigor, were too feeble for any movement or exercise beyond the minimum of vitality required to stay alive. This one element of debility—passive existence alone—was profound, and the sole cause for uneasiness. Instead of recovering within ten days or a fortnight, most of these sufferers lingered for weeks, sometimes even for months, and not a few dwindled on for a year or two, to die of sheer exhaustion at last. Cases were cited in point. The next condition, often occurring by itself, was marked by extreme nervousness. A third condition, not very frequent, but seen often enough to impress the clinician, was marked by mental involvement, occasionally amounting to prolonged delirium, to stupor little short of coma, to hallucinations during or even after convalescence from the real attack, and rarely to mania or continuing insanity. One of the most impressive and rare complications of grippe which he recalled ever having seen consisted in extreme clonic spasmodic seizures, particularly involving the heart, the diaphragm, and the muscles of respiration, with perfect mentation during it all, but giving rise to the most pitiable agony of fear of impending death. The writer discussed several other complications of influenza, and closed by saying that his object was to sound a note of danger, and to awaken physicians to the frequency of complications, and insisting on their prompt recognition.

Clinical Significance of Ascites.—Dr. Raymond Wallace, of Chattanooga, discussed this subject, and reported two instructive cases. One case illustrated unusual difficulty of making an accurate diagnosis. The unusually pronounced alcoholic history in this case, with excessive peripheral arteriosclerosis, taken with the gastric symptoms and the presence of ascites, naturally led to a diagnosis of atrophic cirrhosis; and the absolute absence of any cirrhotic changes in the liver was a point of interest. The disappearance of the miliary carcinosis of the peritoneum after scrubbing and exposure to the air presented a phase analogous to the operative cure of miliary tubercle of the peritoneum.

Acute Septic Osteitis.—Dr. Jere A. Crook, of Jackson, stated that his experience in the treatment of this disease comprised only a few cases, and the greater number of them did not come under his treatment until they had become chronic. He presented a specimen of a tubular sequestrum that he removed from the femur of a ten-year-old boy. This was a case of chronic osteomyelitis that had been discharging freely for several months. Upon cutting down upon the femur a large cloaca was found, and a freely movable sequestrum. The opening was enlarged with a chisel, the sequestrum removed, and almost the entire cavity of the shaft was curetted. It was irrigated and packed with gauze and allowed to granulate from the bottom. Another case was one that he saw in connection with his father. This was a severe case of chronic osteomyelitis of the femur in a twelve-year-old boy. The disease had existed for a year, and the necrosis had progressed so far that the shaft of the bone was entirely consumed for about two inches. The ends of the remaining bone in this case were rounded with bone forceps.

all loose pieces removed, the two freshened ends put in apposition, drainage inserted, and the limb encased in splints. The result was unusually good. The bone united, the wound healed entirely, and the patient had a useful leg with only about three inches of shortening. Here amputation seemed indicated, but conservative treatment saved the limb. He had only amputated twice for osteomyelitis, and then after making every effort to save the limb. Amputation should be the dernier resort, only to be done when necessary to save life. Other similar cases were reported.

Prophylaxis of Tuberculosis.—At the evening session of the second day this subject was discussed largely for the benefit of the laity, and speeches were made by Dr. John A. Witherspoon, Rev. Collins Denny, Captain A. J. Harris, and Mr. G. H. Baskette, representing the lay press.

Gall-Stones in the Common Duct.—Dr. W. D. Haggard, of Nashville, read a paper on this subject. He said that gall-stones in the common duct had been found once in every five cases operated by Robson, and once in every seven cases of the Mayos. It was estimated that 67 per cent. occurred in the duodenal end, 15 per cent. in the hepatic end, and 18 per cent. in the middle of the choledochus. They varied in size usually from a split pea to a nutmeg, although exceptional instances of much larger stones had been recorded. They were usually solitary, although more than one was frequently found. Freeman, of Denver, removed thirty-seven. They usually caused death in from six to twelve months, from cholemia, if the obstruction was complete and unrelieved. He had seen death ensue in six weeks, from cholemia and infection. He spoke of the colics being unsuccessful in the majority of cases, and even when stones had been expelled it usually meant that others were retained. He exhibited eight stones removed from the common duct, after the patient had passed forty-five by the bowel during a period of five years, but had had no jaundice except once, for a period of two days. The duct was dilated so much that the bile escaped alongside of the stones. Stones were about as liable to ulcerate into adjacent viscera as to pass into the intestines. The ball-valve stone of Fenger, with its alternate stoppage and escape of bile, with varying jaundice, gray, then brown stools, was described. The pain, rigor, followed by a rapid rise of fever, sweating, sudden drop in temperature to normal, the appearance of jaundice, lasting a few days, and tenderness on pressure under the ribs, were described as a characteristic sequence in common duct stones, which might be repeated every few days or weeks. Suppurative cholangitis, acute and chronic pancreatitis, were detailed as complications. The absence of jaundice in 35 per cent. of Kehr's cases was dwelt upon, and the occurrence of primary cancer of the gall-bladder or ducts in 5 per cent. of the Mayos' cases, was mentioned. Absence of enlargement of the gall-bladder, with stone in the common duct, was explained in consonance with Courvoisier's law, and enlargement of the gall-bladder from other obstructions of the duct was instanced among many other differential points between calculus and non-calculus obstruction. Operation was not urged in acute obstruction by stone, but recommended in all cases that had been in existence for several weeks or longer, unless there were ecchymotic spots from long-standing cholemia. A quiescent interval between ague-like attacks, and in the absence of jaundice, was recommended for operation, if such an in-

terval could be attained. Many specimens illustrating the various sizes, shapes, complications, and special symptoms of duct stones were exhibited. Choledochotomy and cholecystotomy were shown by large drawings. The Robson incision was recommended, and with a large cushion under the thorax the ducts could be brought almost to the surface by traction on the gall-bladder, and in a straight line; with the finger in the foramen of Winslow the stones could be palpated and extracted. The finger inserted into the duct, if possible, is said to be the best. The duct should be drained by tubage or gauze tied with catgut to the duct. Drains should be surrounded with gutta percha tissue. Cholecystectomy was advocated if one was absolutely certain of the patency of the common duct, if the gall-bladder was (a) contracted, suppurating, thick-walled and useless; (b) in gangrene; (c) neoplasms; (d) fistula into other viscera, and (e) in obstruction to the cystic duct. Robson's mortality in choledochotomy was 5 per cent. in the last 21 cases; 6.5 per cent. in 137 of Kehr's cases; 7 per cent. in 137 of the Mayos' cases, with an additional 4 per cent. who survived the operation, but died some weeks after. The Mayos did 30 consecutive cases without a death.

Circumcision.—Dr. E. A. Timmons, of Columbia, read a paper on this subject, in which he discussed its technic, method of anesthesia, after-treatment, and reported several cases.

Appendicitis.—Dr. John A. Gaines, of Nashville, read a paper on this subject, in which he cited several anomalous cases of this disease.

Etiology and Pathology of Appendicitis.—Dr. Walter Lenehan, of Nashville, contributed a paper with this title, which was based on the examination of twelve cases, which were reported in detail, after which the author discussed the etiology, predisposing causes, and immediate causes. He had found the following organisms in his cases: *Bacillus coli communis*, *Streptococcus pyogenes aureus*, *Staphylococcus pyogenes aureus*, *Bacillus influenzae*, *Bacillus typhosus*, Klebs-Loeffler bacillus, *Bacillus tuberculosis*, and *Diplococcus pneumoniae*. Some non-pathogenic organisms, notably the gas bacillus and a few yeast fungi, were also found, but were invariably associated with one or more of the pathogenic organisms. The organism most frequently found was the colon bacillus. The author drew the conclusion that any micro-organisms capable of producing inflammatory changes in any part of the body might also produce the same changes in the appendix.

Laryngeal Diphtheria.—Dr. O. H. Wilson, of Nashville, stated that the objects of his paper on this subject were, first, to emphasize the importance of early mechanical relief when mechanical obstruction threatened life, and one should not delay until depression was marked. He should remember that rapidity of progress was the characteristic feature of laryngeal diphtheria. One did not know what would happen before his next visit. Second, that while in no other operation did skill show to better advantage, intubation was not a difficult procedure, but could be learned easily by practice. An early operation, though possibly awkward, was better than waiting to give a moribund case to an imported consultant. Moral: Don't wait; intubate.

Tabes Dorsalis.—Dr. G. P. Edwards, of Nashville, discussed this subject, saying that the disease predominated in males ten to one. A neuropathic heredity was an important predisposing factor. The disease might appear in childhood from hereditary

syphilis, but in the acquired form it occurred between twenty-five and fifty years of age, the greater proportion occurring about the age of forty years. The symptomatology of tabes embraced almost every function in the body, the clinical features of which could not be enumerated within the scope of a short paper; but the author mentioned the chief symptoms, and the more important clinical features. The treatment should be directed, first, to the removal of any syphilitic processes present, or suspected; to the improvement of the general health, to stimulate the function of the cells impaired but not lost, to encourage restoration of coordination in the muscular system, and correct any incidental disorders which might retard or complicate the desired result. The author believed that any stage or condition of tabes might be improved or benefited by properly directed treatment. The development of the degenerative changes could be arrested completely in nearly every pre-ataxic case, and that much of the lost function could be restored. He believed that these results might also be obtained in a majority of the ataxic cases, and that this majority was reduced somewhat in proportion to the duration and intensity of the ataxia and the abuse of the specific remedies employed. The author's clinical observation, aggregating fourteen cases in his private work, had been uniformly satisfactory. In these fourteen cases, embracing a variety of conditions and degrees of advancement, all had responded to treatment in a most satisfactory manner. In every case the disease had been arrested and continued so to the present time. In nine cases marked improvement in coordination, gait and general health had persisted. In five cases the knee-jerk had been restored to normal; all painful sensory symptoms had disappeared; dribbling of urine had ceased, and little evidence of the diseases remained. In two cases the pupillary reflex to light had returned to normal. In six cases the Romberg sign was barely noticeable with both feet close together and the eyes closed. In two cases the patients could stand upon one foot with the eyes closed. The author had demonstrated to his own satisfaction, at least, that the X-ray, when of sufficient penetration to obliterate the shadow of bony structures, would stimulate cell activity in the diseased cord, facilitate the restoration of the lost function in cells not completely destroyed, and relieve the crises and other lightning pains. May not one hope for advancement in the therapy of this disease as well as in tuberculosis, cancer, and many other conditions as witness in the advanced therapeutics of to-day?

Alcoholic Insanity.—Dr. I. A. McSwain, of Paris, offered the following suggestions on this subject: (1) The children of drunken and debauched parents ought, for obvious reasons, to be taken away from them and placed in decent homes, or removed to industrial institutions provided by the State. This would check their hereditary tendencies to drunkenness, and therefore reduce the number being raised up to become a burden to the State in the way of paupers, criminals and lunatics. (2) Young people, who early in life contract the pernicious habit of drinking should also be removed from the temptation of their environments, and placed in institutions in which they should be taught some useful employment, and restrained from vicious habits. (3) The drinking man, as soon as he began his spree, before he was crazed by it, should be taken into custody, not as a mere nuisance, but as a dangerous man, or one likely to become so, because of insanity in the

incipient stage. (4) The confirmed drunkard, the chronic alcoholic subject, should on no account be allowed to exercise his personal liberty in the pursuit of delusions which result from prolonged excesses.

The following papers were also read: "Some Recently Collected Statistics on the Increasing Frequency of Abortion; Some Causes for the Same," by Dr. J. L. Andrews, of Memphis; "Keratoses Follicularis," by Dr. G. P. Edwards, of Nashville; "Bone Surgery," by Dr. R. A. Barr, of Nashville; "The Physician as an Advertising Medium," by Dr. F. J. Runyon, of Clarksville.

Officers.—The following officers were elected: President, Dr. Cooper Holtzclaw, Chattanooga; Vice-Presidents, Dr. S. W. Woodyard, Greeneville; Dr. Alfred Moore, Memphis; Dr. A. F. Richards, Sparta; Secretary, Dr. George H. Price, Nashville; Treasurer, Dr. W. C. Bilbro, Murfreesboro; Delegates to American Medical Association, Dr. W. J. Miller, Johnson City; Alternate, Dr. G. O. Bicknell, Madisonville; Dr. W. D. Haggard, Nashville; Alternate, Dr. Louis Leroy, Nashville.

Memphis was selected as the place for holding the next annual meeting; time, second Tuesday in April, 1906.

BOOK REVIEWS.

STUDIES IN THE PSYCHOLOGY OF SEX. Sexual Selection in Man. By HAVELOCK ELLIS. F. A. Davis Company, Philadelphia.

HAVELOCK ELLIS continues his studies in the origin and development of the ruling sense of organic nature. In this volume he discusses the influences of touch, smell, hearing and vision. Touch he shows is the most intimate and vital of the primary sexual characters.

No other English author has contributed so luminously to the great subject as our author, proving at the same time scientific and interesting. The great tendency to pander to the prurient is carefully suppressed, and the present volume, like his previous ones, is eminently sound and satisfactory.

On the subject of the relation of music to sexual attraction, selection, etc., the author is not in his usual judicial mood. Whether he lacks a musical training, and thus is outside of the gamut, is not apparent, but he is strangely misinformed and, we believe, lacks psychological insight regarding the powerful impulse to sexual thought that music is capable of exciting in a large number of people in all strata of society.

TREATISE ON DISEASES OF THE SKIN for the use of advanced students and practitioners. By HENRY W. STELWAGON, M.D., Ph.D., Clinical Professor of Dermatology in the Jefferson Medical College and Woman's Medical College, Philadelphia; Dermatologist to the Howard and Philadelphia Hospitals, etc. Third edition with 220 illustrations in the text, and 26 full-page lithographic and half-tone plates. W. B. Saunders & Company, Philadelphia, New York and London.

THIS treatise was so very well reviewed by us when it first appeared, that we can only repeat our good opinion of its efficiency from the general practitioner's standpoint. In this edition the X-ray and high frequency current are given due notice, and the Finsen light treatment has been enlarged upon. The illustrations are as good as would seem possible in a work of this price.